

the **sensor** people

Product overview 2012 / 2013





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Knowing what makes for success

A host of good reasons for your success.

No matter what the field, achieving success is all about optimum interaction between different factors. At Leuze electronic, these factors are a broad, tightly coordinated product range, application expertise gathered over decades and innovative product developments designed for all commonly used interfaces and network environments. It is the combination of these factors that makes Leuze electronic the leading supplier of optoelectronic sensors. Close contact with our customers and, consequently, a clear understanding of their needs and requirements are among our particular strengths. This applies not only to technical questions, but also increasingly to the areas of after-sales support and services.

For nearly 50 years, Leuze electronic has been developing, producing and marketing optoelectronic sensors and inductive switches, identification systems, image processing systems, data transmission systems and safety sensor systems for industrial automation. The company is known worldwide as one of the leaders in innovation for the entire spectrum of optical sensors in factory automation.



Complete range

Our components and systems can be combined on a modular basis to address your individual requirements – with the goal of finding the most efficient solution every time. Leuze customers can benefit equally from a wide selection of standard sensors and from individually tailored special solutions. The functionality offered by this combination is assured in the long term by a cross-system product policy and a range of ingeniously engineered software solutions.

Application expertise

Leuze electronic systems have been used for decades in a wide variety of industries. Our highly qualified technical consultants work with you to develop the most efficient solutions – regardless of whether this can be achieved using

a standard application or whether you require a complex, custom-engineered high-end solution.

Where necessary, we are always prepared to satisfy entirely new requirements by either making custom modifications to standard components or by developing completely new products.

Market innovations

Our broad product range is constantly being further developed. We use the demands made by the market and by our customers as our benchmark. On this basis, we develop pioneering technical solutions designed to give our customers the decisive advantage.

Connectivity

Our systems can be simply and quickly linked to all common, international field bus systems. At the same time,

custom-tailored Leuze software solutions afford a maximum of operating convenience. As one of the driving forces behind the further development of industry standards, we are also active in a large number of specialized working groups. This role allows us to put our broad-based application expertise to good use, and provides our customers the assurance of solutions that are efficient, practically oriented and fit for the future.

Among the many good reasons why you should opt for Leuze electronic, there is one which deserves a very special mention: For many of our customers, the deciding factor when choosing their sensor technology partner was the people with whom they were dealing. Our workforce is characterized by reliability, absolute technical excellence and a service-conscious approach.



Optoelectronic Sensors

Automation solutions for reliable detection.

Optoelectronic sensors used in industrial production and automation must function reliably even under the toughest environmental conditions. The automation of production processes constantly places new demands on the quality and efficiency of switching and measuring sensors. The miniaturization of products, faster and more precise detection, interference from external light sources, reflective packages or tough environmental conditions involving a high degree of soiling, extreme temperature ranges or intensive cleaning cycles are just some of the challenges faced. As the complexity of applications increases, features such as simple commissioning, easy handling and connectivity are of increasing importance.

We offer a range of solutions to address these requirements. **A²LS** (Active Ambient Light Suppression) is one example of this. This technology largely eliminates susceptibility to interference from pulsed light sources, for example energy saving lamps. **brightVision®** substantially simplifies the handling and commissioning of sensors. An extremely bright, easily visible light spot and bright display diodes provide all-round visibility facilitate the simple alignment and operation of sensors. **IO-Link** is just one example of enhanced connectivity. With seamless technology throughout the system, each individual automation component with IO-Link capability can be addressed quasi top-down through the control system. Taken to a final stage of expansion, this technology can facilitates the initialization of the configurable components used in a system entirely from the control system.



Cubic Series

2 Series Standard



3B Series Standard



Specifications

Dimens. excl. plug, W x H x D

Operating voltage

Switching outputs

Connection type

Protection class

Certifications

Housing

Throughbeam photoelectric sensors

Operating range*

Light source

Switching

Switching frequency

Retro-reflective photoelectric sensors

Operating range*

Light source

Switching

Switching frequency

Diffuse reflection light scanners

Operating range*

Light source

Switching

Switching frequency

Diffuse reflection light scanners with background suppression

Operating range*

Light source

Switching

Switching frequency

Options

Transparent media

Protective photoelectric sensors category 2

Warning output

Activation input

A²LS

Features

8 × 23 × 12 mm

10–30 V DC

PNP, NPN

Cable, cable+M8/M12

IP 67



Thermoelastic elastomer

0–2 m

Red light

Light, dark

385 Hz

0.07–4 m

Red light

Light, dark

700 Hz

Permanently set to 15, 30, 50 mm

Red light

Light, dark

700 Hz

X

X

X

X

Pin-point LED. Powerful interference suppression. 2 inlaid metal sleeves. Scanner with a laser-like light spot. Polarised retro-reflective photoelectric sensor with glass optics.

11 × 32 × 17 mm

10–30 V DC

PNP, NPN, push-pull

M8, cable, cable+M8/M12

IP 67



Plastic

0–10 m

Red light

Light, antivalent

1000 Hz

0–7/0.02–5.5/0–3 m

Red light/infrared/laser (class 1)

Light/dark, antivalent

1000/1000/2000 Hz

0–550 mm

Red light

Light, dark, antivalent

1000 Hz

5–500 mm

Red light/laser (class 1)

Light, antivalent

1000/2000 Hz

X

X

X

X

Sturdy metal sleeves. Scanners with varied light-spot geometry and V-configuration, laser models, teach-in. Foil detection < 20 µm. Bottle detection. ECOLAB. Contrast scanner.

* Typical operating range limit

5 Series Standard



14 × 33 × 20 mm

10–30 V DC

PNP, NPN

M8, cable+M12, cable

IP 67



Plastic

0–15 m

Red light

Antivalent

500 Hz

0.02–6 m

Red light

Antivalent

500 Hz

X

X

Simple mounting by means of integrated threaded sleeves. Flexible cable outlet to the rear or downward. Fast alignment through *brightVision*.

53 Series Standard



14 × 54 × 20 mm

10–30 V DC

Push-pull

M8, cable+M8, cable

IP 67, IP 69 K



CDRH US

Stainless steel 316L

0–10 m

Red light

Antivalent

1000 Hz

0–5/0–3 m

Red light/laser (class 1)

Antivalent

1000/2000 Hz

X

X

HYGIENE-Design. CleanProof+. ECOLAB. EHEDG. Foil detection < 20 µm. Bottle detection. Contrast scanner.

55 Series Standard



14 × 36 × 25 mm

10–30 V DC

Push-pull

M8, cable+M12, cable

IP 67, IP 69 K



CDRH US

Stainless steel 316L

0–10 m

Red light

Antivalent

1000 Hz

0–5/0–3 m

Red light/laser (class 1)

Antivalent

1000/2000 Hz

X

X

WASH DOWN-Design. CleanProof+. ECOLAB. EHEDG. Foil detection < 20 µm. Bottle detection. Contrast scanner. Versions for Ex zone 2 and 22.

28 Series Standard



15 × 47 × 32 mm

10–30 V DC

PNP, NPN

M12, cable

IP 67



Plastic

0–15 m

Red light

Antivalent

500 Hz

0.02–6 m

Red light

Antivalent

500 Hz

X

X

Universal front- and plug-side M18-hole mounting option. Simple through-hole mounting with housing-side anti-rotation protection for mounting nuts. Fast alignment through *brightVision*.

Cubic Series

Specifications

Dimens. excl. plug, W x H x D

Operating voltage

Switching outputs

Connection type

Protection class

Certifications

Housing

Throughbeam photoelectric sensors

Operating range*

Light source

Switching

Switching frequency

Retro-reflective photoelectric sensors

Operating range*

Light source

Switching

Switching frequency

Diffuse reflection light scanners

Operating range*

Light source

Switching

Switching frequency

Diffuse reflection light scanners with background suppression

Operating range*

Light source

Switching

Switching frequency

Options

Transparent media

Protective photoelectric sensors category 2

Warning output

Activation input

A²LS

Features

25 Series Standard



15 × 39 × 29 mm

10–30 V DC

PNP, push-pull

M8/M8+snap/M12, cable,
cable+M8/M12

IP 66, IP 67

CE CDRH cUL US

Plastic

0–24 m

Red light

Light, antivalent

500 Hz

0–10/0.05–15 m

Red light/laser

Light, dark, antivalent

500/2000 Hz

5–800 mm

Red light

Antivalent

500 Hz

0–1000 mm

Red light/infrared

Light, dark, antivalent

250 (1000)/250 Hz

X

X

X

X

X

Mechanically adjustable scanning range. Sensitivity adjustment. Scanner for bay positioning/for the detection of broken containers/with focused light spot. Retro-reflective sensor with large performance reserve / for stretch-wrapped containers.

18 Series Standard



15 × 50 × 33 mm

10–30 V DC

PNP, NPN, 4–20 mA

M8, M12, cable

IP 67, IP 69 K

CE cUL US

Metal, stainless steel VA

0–5 m

Red light

Light/dark

1500 Hz

0–5 m

Red light

Light/dark

1500 Hz

0–5 m

Red light

Light/dark

1500 Hz

0–5 m

Red light

Light/dark

1500 Hz

X

X

X

X

X

Tracking function. Teach-In. Foil detection < 20 µm. Bottle detection. ECOLAB.

* Typical operating range limit

8 Series Standard



15 × 48 × 38 mm

10–30 V DC

PNP, NPN, push-pull

M12, cable

IP 67, IP 69 K



CDRH



Metal, glass

0–20/0–100 m

Red light/laser

Antivalent/light

1500/2800 Hz

0–8/0–20 m

Red light/laser (class 1)

Antivalent/light, dark

1500/2800 Hz

5–800 mm

Red light

Antivalent

1500 Hz

5–400 mm

Red light/infrared/laser

Antivalent/light

1000/1000/2000 Hz

X

X

X

X

Contrast scanner, luminescence scanner. Foreground suppression. Ultrasonic sensors. Turnable connector. Foil detection. Bottle detection. ECOLAB.

95 Series Standard



17 × 66 × 35 mm

10–30 V DC/18–30 V DC

PNP, NPN

M12

IP 67, IP 69 K



Metal

0–18/0–20 m

Red light/infrared

Antivalent

1000 Hz

0–9 m

Red light

Light, antivalent

1000 Hz

10–900/10–400 mm

Red light/infrared

Antivalent

1000 Hz

20–500 mm

Red light/infrared

Antivalent

1000 Hz

X

X

X

X

Foreground suppression. Operator guidance for transparent media. Bottle detection. Foil detection.

46B Series Standard



18 × 75 × 43 mm

10–30 V DC

PNP, push-pull, relay

M12, cable+M12, cable

IP 67, IP 69 K



CDRH



Plastic

0–60 m

Red light

Light, antivalent

500 Hz

0.05–18 m

Red light

Light, dark, antivalent

500 Hz

30–900 mm

Red light

Antivalent

500 Hz

5–1800/0–2500/50–1200 mm

Red light/infrared/laser (class 1)

Light, dark, antivalent

200/200/1000 Hz

X

X

X

Scanner with optimized light spot for roller conveyors. Scanner with teach-in and special functions. Retro-reflective sensor for stretch-wrapped containers. Versions for Ex zone 2 and 22 ECOLAB. IO-Link.

96 Series Standard



30 × 90 × 70 mm

10–30 V DC/20–230 V AC/DC

PNP, NPN, push-pull, relay

M12, terminals

IP 67, IP 69 K



CDRH



Metal, plastic

0–39/0–150 m

Red light/infrared

Light, dark, antivalent

500 Hz

0–28/0.1–18 m

Red light/infrared

Light, dark, antivalent

1000 Hz

30–700/20–1200 mm

Red light/infrared

Light, antivalent

1000 Hz

100–1200/10–2500/50–6500(25000) mm

Red light/infrared/red light laser/infrared (class 1)/red light (class 1)

Light, dark, antivalent

300/300/100 Hz/50 Hz

X

X

X

X

Optics heating. Switching delay. Up to 3 switching points. Foreground suppression. Deactivation. L/D switching. Mech. adjustable scanning range. Teach-In. Versions for Ex zones 2 and 22/with window function/for collision protection/feed-through monitoring.

Cylindrical Sensors Fiber Optic Sensors Ultrasonic sensors

Specifications

Dimens. excl. plug, W × H × D

Operating voltage

Switching outputs

Connection type

Protection class

Certifications

Housing

Throughbeam photoelectric sensors

Operating range*

Light source

Switching

Switching frequency

Retro-reflective photoelectric sensors

Operating range*

Light source

Switching

Switching frequency

Diffuse reflection light scanners

Operating range*

Light source

Switching

Switching frequency

Diffuse reflection light scanners with background suppression

Operating range*

Light source

Switching

Switching frequency

Options

Transparent media

Protective photoelectric sensors category 2

Warning output

Activation input

A²LS

Features

412 Series Cylindrical Sensors



M12 × 55 mm

10–30 V DC

PNP

M12, cable

IP 67



Metal

0–8 m

Red light

Light/dark

500 Hz

0.05–1.6 m

Red light

Light/dark

700 Hz

0–400 mm

Red light

Light/dark

700 Hz

318(B) Series 618 Series Cylindrical Sensors



M18 × 46 mm, M18 × 60 mm

10–30 V DC

PNP, NPN, push-pull

M12, cable

IP 67



CDRH

Full metal, stainless steel, plastic

0–15/0–45/0–120 m

Red light/infrared/laser (class 1)

Antivalent / light/dark

500/1000/5000 Hz

0.02–6/0.1–15 m

Red light/laser (class 1)

Antivalent / light/dark

500/5000 Hz

0–250/0–700 mm

Infrared/laser

Antivalent / light/dark

500/1000/5000 Hz

1–140 mm

Red light

Antivalent

1000 Hz

X

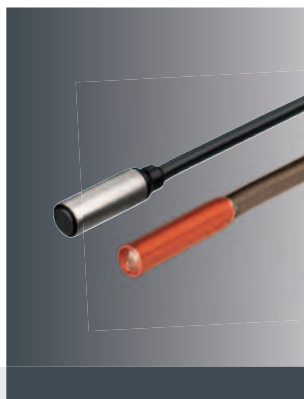
X

X

Bracket versions.
Simple alignment with
omni-mount.
Embedded mounting option.
Variants with M18 stainless steel
sleeve and full-metal version.

* Typical operating range limit

Mini Sensors



10–30 V DC

PNP, NPN, relay

M12, cable

IP 65

Metal, stainless steel, plastic

0–35 m

Infrared

Light/dark

70/1000 Hz

0–1.5 m

Infrared

Light/dark

70/1000 Hz

0–50 mm

Infrared

Light/dark

70/1000 Hz

X

LVS Fiber Optic Amplifierm



10–30 V DC

PNP, NPN

M8, cable, terminals

IP 65



Metal, plastic

Red light/infrared

Light/dark

1500/1000 Hz

Red light/infrared

Light/dark

1500/1000 Hz

For glass fiber and plastic fiber optics.
Teach-In.
Sensitivity adjustment.
Time functions.
Activation input.

GF/KF Fiber Optics



Glass

Plastic

Silicone, brass,
stainless steel

Plastic

0–300 mm

0–400 mm

0–80 mm

0–120 mm

Angular or bendable end piece.

USS Ultrasonic Sensors



12–30 V DC/20–30 V DC

PNP, NPN

M8, M12



Metal, plastic

0–650/0–800 mm

Ultrasonics (300 kHz)

NO/NC (object detected)

100/250 Hz

10–200/600–6000 mm

Ultrasonics (200–400 kHz)

NO/NC (object detected)

4–50 Hz

Configurable via PC.
Various opening angles and sound lobes.
Design with angle head.
1 or 2 switching outputs.

Inductive Switches

IS 255
IS 288
Standard



IS 240
Standard



Specifications

Dimensions

5 × 5 × 25 mm
8 × 8 × 35 mm

40 × 12 × 26 mm

Operating voltage

10 – 30 V DC

10 – 30 V DC

Range

Up to 1.5 mm
Up to 3 mm

Up to 8 mm

Switching outputs

PNP, NPN
NO (make-contact),
NC (break-contact)

PNP, NPN, NO (make-contact),
NC (break-contact)

Switching frequency

Up to 3000 Hz
Up to 5000 Hz

Up to 1400 Hz

Connection type

M8, cable

M8, cable

Protection class

IP 67

IP 67

Certifications

CE cUL US

CE cUL US

Housing

Metal, plastic

Plastic

Features



IS 244

Standard



40 × 40 × 67 mm
40 × 40 × 120 mm

10–30 V DC

Up to 40 mm

PNP, NPN,
NO (make-contact),
NC (break-contact)

Up to 150 Hz

M12, connection terminals

IP 67, IP 69 K



Plastic

Sensor heads can be oriented in 5 directions.

IS 204 IS 205 IS 206

Standard



Ø 4.0 × 25 mm
M5 × 25 mm
Ø 6.5 × 35 mm

10–30 V DC

Up to 1.5 mm
Up to 1.5 mm
up to 3.0 mm

PNP, NPN
NO (make-contact),
NC (break-contact)

Up to 3000 Hz
Up to 3000 Hz
Up to 5000 Hz

M8, cable

IP 67



Metal, plastic

IS 208 IS 212 IS 218 IS 230

Standard



M8 × 45 mm
M12 × 45 mm
M18 × 60 mm
M30 × 60 mm

10–30 V DC

Up to 4.0 mm
up to 10 mm
Up to 20 mm
Up to 40 mm

PNP, NPN
NO (make-contact),
NC (break-contact)

Up to 5000 Hz
Up to 3000 Hz
Up to 2000 Hz
Up to 1500 Hz

M8, M12, cable

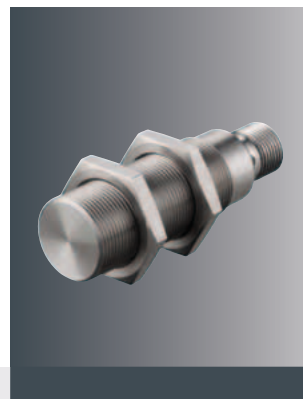
IP 67



Metal, plastic

IS 212 IS 218 IS 230

Food & Beverage



M12 × 60 mm
M18 × 64 mm
M30 × 64 mm

10–30 V DC

Up to 10 mm
Up to 20 mm
Up to 40 mm

PNP, NPN
NO (make-contact),
NC (break-contact)

Up to 400 Hz
Up to 200 Hz
Up to 100 Hz

M12

IP 68, IP 69 K



Stainless steel (V4A)

Full-metal housing.
ECOLAB.

Measuring Sensors



LPS 36 LES 36 LRS 36 Light Section Sensors



ROD 4 (plus) Surface Laser Distance Sensors



Specifications

Function

Distance measurement,
light section, optical

Distance measurement,
scanner, optical

Dimens. excl. plug, W×H×D

56 × 74 × 160 mm

140 × 148 × 133 mm
141 × 167 × 168 mm

Operating voltage

18 – 30 V DC

24 V DC

Outputs

4 – 20 mA
1 – 10 V
EtherNet
4 × push-pull
PROFIBUS DP

EtherNet/RS 232/RS 422
4 × PNP, 8 reversible detection
field pairs

Connection type

M12

Sub-D, M12, M16

Protection class

IP 67

IP 65

Certifications

CE CDRH cUL US

CE CDRH cUL US

Operating range*

200 – 800 mm

0 – 65000 mm

Measurement principle

Optical/laser (class 2M)

Optical/laser (class 1)

Measurement time

10 ms

20 – 40 ms/scan

Measuring panel width/ angular range

Max. 600 mm

190°

Resolution

1 mm

5 mm

Mouth width

Mouth depth

Number of inspection tasks

16

7

Operation

Configuration software

Configuration software

Features

LPS 36: light section sensor for
2D/3D object measurement.
LES 36: light section sensor for
width/height and position
measurement.
LRS 36: light section sensor for
object detection in up to 16
detection fields.
Alignment aid with OLED display.
Inputs: activation, cascading,
trigger.
Optional: encoder port.

Optional: heating.
Dust suppression.
Teach-In.

* Typical operating range limit

ODSL 8 ODSL 9 ODS 96B

Optical Distance Sensors


Distance measurement,
optical

15 × 48 × 38 mm
21 × 50 × 50 mm
30 × 90 × 70 mm

10–30 V DC
18–30 V DC (analog), IO-Link

4–20 mA
1–10 V, 0–10 V
RS 232/RS 485
1 × PNP/2 × push-pull
IO-Link

M12

IP 67, IP 69 K

CE CDRH

25–200 mm
20–500 mm
50–450 mm
60–25.000 mm

Optical/LED/laser (class 1, 2)

1–100 ms

0.01–3 mm

Teach-in
Configuration software
Display

OLED display for measurement
value display and configuration.

ODSL 30

Optical Distance Sensors


Distance measurement,
optical

79 × 69 × 149 mm

10–30 V DC
18–30 V DC (analog)

4–20 mA
1–10 V
RS 232/RS 485
1 × PNP, 2 × PNP, 3 × PNP

M12

IP 67

CE CDRH c UL US

200–65.000 mm

Optical/laser (class 2)

30–100 ms

0.1–1 mm

Teach-in
Display

LC display for measured value
display and configuration.

GS 754(B)

CCD Forked Sensors



Edge detection

19.4 × 81.5 × 91 mm
20 × 155 × 91.5 mm

10–30 V DC (digital)
18–30 V DC (analog)

2 × 4–20 mA
2 × 0–10 V
RS 232/RS 485
1 × PNP, 2 × PNP

M12

IP 54, IP 65

CE

Optical/LED

Min. 2.5 ms

25 mm

14 µm

27 mm/100 mm

42 mm

Terminal program

Detection of transparent media.
Foil detection > 0.1 mm.
Turning connector.

USDS

Ultrasonic sensors


Distance measurement,
ultrasonics

M18 × 104 mm
M30 × 150 mm

20–30 V DC

4–20 mA
0–10 V

1 × PNP

M12

IP 67, IP 65

CE c UL US

50–6000 mm

Ultrasonics

100 ms–1 s

1–9 mm

Potentiometer, optional:
Configuration software

Temperature compensation.

Special Sensors

KRT 20(B) KRT 55 KRT 3B Contrast Scanners



CRT 20B CRT 442 Color Scanners



LRT 440 LRT 8 Luminescence Scanners



Specifications

Function	Contrast distinction
Dimensions excl. plug, W×H×D	30 × 82 × 53 mm 14 × 36 × 25 mm 11 × 32 × 17 mm
Operating voltage	12–30 V DC
Outputs	PNP, NPN, push-pull Analog
Connection type	M12, M8, cable
Protection class	IP 67, IP 69 K
Certifications	CE cULUS
Operating range*	10–80 mm
Light source	LED, laser (class 1)
Switching frequency	50,000/6000/10,000 Hz
Transmitter color	RGB/white/red laser
Light beam gate	Lateral or frontal
Light spot shape	Rectangular/round
Light spot position	Lengthwise, sideways
Operation	Teach-In, EasyTune, IO-Link

Features

Temperature compensation.
Large dynamic range.
Pulse stretching.
Light/dark switching.
Reversible switching threshold.
ECOLAB.
IO-Link process data.
IO-Link configuration.
IO-Link diagnostics.

Color detection	Color detection
Dimensions excl. plug, W×H×D	30 × 82 × 53 mm 12 × 40 × 22 mm
Operating voltage	12–30 V DC
Outputs	1 × PNP/4 × PNP or 1 × NPN/4 × NPN Analog
Connection type	M12
Protection class	IP 67
Certifications	CE cULUS
Operating range*	12 mm 60 mm
Light source	LED
Switching frequency	6000/1500 Hz
Transmitter color	RGB
Light beam gate	Lateral or frontal
Light spot shape	Square
Light spot position	Lengthwise
Operation	Teach-in

Small construction.
Glass optics.
Turning connector.
ECOLAB.

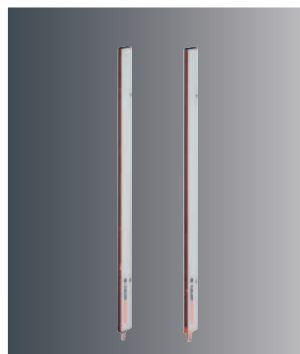
Luminescence detection	Luminescence detection
Dimensions excl. plug, W×H×D	23 × 70 × 43 mm 15 × 48 × 38 mm
Operating voltage	10–30 V DC
Outputs	PNP, NPN
Connection type	M12, cable
Protection class	IP 67, IP 69 K
Certifications	CE cULUS
Operating range*	0–150 mm
Light source	LED
Switching frequency	600/2000/1500 Hz
Transmitter color	UV/blue
Light beam gate	Front
Light spot shape	Round
Operation	Teach-In, potentiometer, remote calibration

Small construction.
Sensitivity adjustment.
ECOLAB.
Filter for the detection of paper,
lyra chalk, yellow marks.

* Typical operating range limit

Light Curtains

VARIO B PRG 108 Switching



KONTURflex Measuring



Specifications

Function

One-way principle
Reflection principle

One-way principle

Dimensions excl. plug, W×D×H

10 × 27 × 120 ... 3370 mm
12 × 58 × 120 ... 315 mm
22 × 80 × 25 mm

40 × 40 × 82 ... 3202 mm

Operating voltage

24 V DC
10–30 V DC

24 V DC

Outputs

PNP, NPN

PNP, RS 232, RS 485
MODBUS, PROFIBUS
CANopen

Connection type

M8, cable, cable+M12

M12

Protection class

IP 54, IP 67

IP 65

Certifications



Operating range*

5000 mm
3000 mm

4000 mm

Light source

Infrared/red light

Infrared

Cycle time

1 ms per beam / 2 ms

Max. 25 ms

Measurement field length

35–3100/60 mm

80–3200 mm

Resolution

5, 12.5, 25, 50, 100 mm
6 mm

5, 10, 20 mm

No. of beams

Max. 64/max. 8

Max. 512

Operation

Autocalibration,
PC configuration,
configuration of switching output

Configuration via PC or system
controller,
inloop diagnostic facility

Features

2 switching ranges.
Suppression of 4 light axes.
Through holes.
Blind holes with thread.

Max. 4 systems with up to
512 beams per controller.

* Typical operating range limit

Forked Sensors

(I)GSU 14C
GSU 06
GK 14
Ultrasonics/capacitive



(I)GS 63
GS 61
GS 21
Optical



GS (L) 04
Optical



Specifications

Dimensions
excl. plug,
W×H×D

Operating voltage

Switching outputs

Connection type

Protection class

Certifications

Housing

Throughbeam sensors

Mouth width

Light source

Switching

Switching frequency

Options

Operation

Warning output

Features

10–30 V DC/12–30 V DC

PNP, NPN, push-pull

M8, M12, cable, cable+M12

IP 62/IP 65



Metal

0.9–4 mm

Ultrasonics/Capacitive

Light/dark/antivalent

Up to 5000 Hz

Teach

X

Detection of transparent + paper labels.
Multichannel detection of labels with VSU 15.

10–30 V DC/24 V DC

PNP, push-pull

M8, cable, cable+M12

IP 65



Metal, plastic

2–8 mm

Infrared

Light/dark/antivalent

1000/8000/10,000 Hz

Teach/potentiometer

X

Detection of paper labels
ALC function.
Storage of up to ten teach values in the sensor.
Removable operating head on potentiometer version.

10–30 V DC

PNP, NPN

M8

IP 65



Metal

20/30/50/80/120/220 mm

Red light/laser

Light/dark

1500/3000 Hz

Potentiometer

Detection of small objects.
Light/dark switching on device.
Laser fork for transparent objects.

Accessories

Mounting systems



Plugs and connection cables



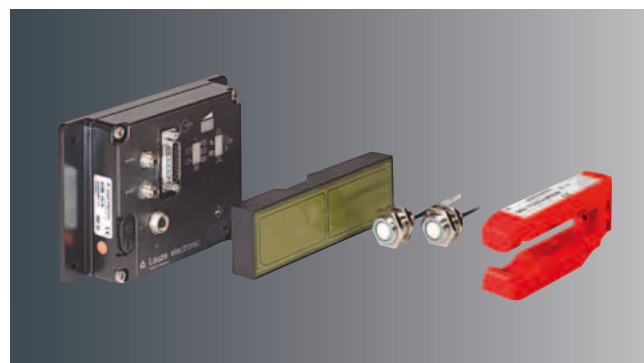
Double Sheet Monitoring Splice Detection

DB 12B / 112B / 14B, GSU 710 / 712

Double Sheet Monitoring

VSU 12, GSU 14C

Splice Detection



Description

The double-sheet monitoring systems from Leuze electronic reliably prevent the infeed of multiple sheets. This helps reliably prevent damage and the creation of scrap in machines that process paper and cardboard stacks. The systems operate on the basis of various physical principles and are thus able to cover nearly the entire range of applications.

Typical applications

Double sheet detection of

- Paper sheets
- Cardboard sheets
- Films

Splice detection, e.g. on reels

Technical information

Physical principles:

- Capacitive
- Ultrasonics (Ø 12 mm or 18 mm, short construction)

Working ranges:

- From 20 g/m² to 1200 g/m² (cardboard thickness 2 mm)
- Detection of 1/2 or 2/3 plies
- Outputs for single or double sheets
- Configuration facility

Models:

- Individual components (M12, M18)
- Compact fork designs

Reflectors

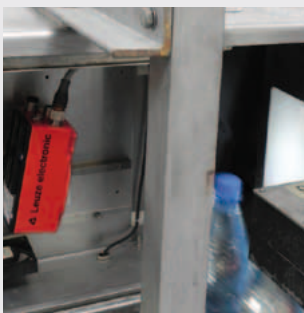
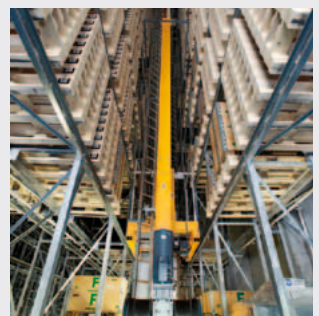


Identification Systems Data Transmission Systems Distance Measurement

State-of-the-art products through top application expertise.

One of Leuze electronic's leading areas of competence in identification technology lies in **field bus networking**. With the BCL 34 bar code reader, Leuze has integrated the PROFIBUS field bus interface into a bar code reader for the very first time. This development has permitted the implementation of functions such as direct configuration via the control system and extreme high-speed data communication. Developed to an outstanding degree of innovation, the BCL 500i heralds the next generation of bar code readers, featuring integrated field bus interfaces and second-generation code reconstruction technology (CRT). "**webConfig**", which is integrated in both the BCL 500i and in the LSIS 400i smart camera, makes possible configuration without additional software.

It is the broad product spectrum of IDENT technologies which opens up maximum flexibility to our customers. The identification of bar codes, 2D-codes and RFID transponders is just as integral to our core competence as optical distance measurement, data transmission, positioning and industrial image processing. Another innovation is the bar code positioning system, a globally unique system for the positioning of automatic systems such as overhead conveyors. Its capabilities include not only accuracy to the millimeter over distances of up to 10,000 meters, but also precise positioning on corners and diverters. These are just a few examples from the extensive R&D achievements and application expertise of our engineers. Every new and further development is aimed at offering our customers not only greater efficiency and performance, but also easy installation. Needless to say, we place great emphasis on achieving optimum cost effectiveness.



Stationary Bar Code Readers



Specifications

Reading distance
(dependent on version)

Smallest resolution

Scanning rate

Lens variant

Reading method

Inputs/outputs

Interfaces

Connectivity

Supply voltage

Protection class

Network master

Certifications

Accessories

Optional

Mounting systems

Features

BCL 8 Bar Code Readers



40 – 160 mm

0.125 mm

600/500 scans/s

N, M

Single Line Scanner

1/1

Integrated:
RS 232

**With connector unit
MA 8 (point to point)**
RS 485

**With connector unit
MA 200i/MA 40**
PROFINET IO/RT, PROFIBUS DP,
INTERBUS, Ethernet TCP/IP, UDP,
IP, EtherCAT, DeviceNet, CANopen

5 V DC (10 – 30 V DC via MA)

IP 67

MA 31

CE CDRH c UL US

BT 8

Reads all common 1D-codes
including pharmaceutical codes.
Robust industrial version in
a metal housing – IP 67.
M12 connection technology or
cable variant.
Reference code comparison.

BCL 20 Bar Code Readers



50 – 450 mm

0.15 mm

1000/800 scans/s

N, M, F

Single Line Scanner
Raster Scanner

1/1 or 2/2

Integrated:
RS 232
RS 485

**With connector unit
MA 2/4**
multiNet

**With connector unit
MA 200i/MA 40**
PROFINET IO/RT, PROFIBUS DP,
INTERBUS, Ethernet TCP/IP, UDP,
IP, EtherCAT, DeviceNet, CANopen

10 – 30 V DC

IP 65

MA 31

CE CDRH c UL US

BT 20, BT 21

Automatic detection of code type
and code quality.
Failsafe storage of parameters.
Integrated multiNet.
12 optics models.

BCL 30 Bar Code Readers



10 – 750 mm

0.2 mm

1000/800 scans/s

M, F, L, J for Ink-Jet application

Single Line Scanner
Raster Scanner

2/2 or 1/1

Integrated:
RS 232
RS 485
PROFIBUS DP

**With connector unit
MA 2/4**
multiNet

**With connector unit
MA 200i**
PROFINET IO/RT, PROFIBUS DP,
Ethernet TCP/IP, UDP, IP,
EtherCAT, DeviceNet, CANopen

10 – 30 V DC

IP 65

MA 31

CE CDRH cUL US

Service display MSD 101 for BCL 34

BT 56, BT 59

BCL 34 with integrated PROFIBUS interface.
Optionally with heating.
Special inkjet optics for codes applied directly to cardboard.
Compact size, permitting mounting between two conveyor lines.

BCL 300i Bar Code Readers



20 – 700 mm

0.127 mm

1000 scans/s

N, M, F, L

Single Line Scanner
Raster scanner
Deflection mirror
Oscillating mirror
Code fragment technology

1/1

Integrated:
RS 232/485/422
multiNet
PROFIBUS DP
PROFINET IO/RT
Ethernet TCP/IP, UDP

**With connector unit
MA 200i**
EtherCAT, DeviceNet, EtherNet/IP,
CANopen

18 – 30 V DC

IP 65

MA 31

CE

BT 56, BT 59

Integrated fieldbus connectivity.
Code reconstruction technology (CRT).
Available as a front scanner, deflection mirror and oscillating mirror model.
Simple configuration via USB interface without additional software.
Modular connection technology via M12 hood with integrated connectors, terminal hood or cable hood. Optional with display and as heating model.

BCL 500i Bar Code Readers



200 – 2400 mm

0.2 mm

1000 scans/s adjustable
(800 – 1200 scans/s)

N, M, F, L

Single Line Scanner
Oscillating mirror
Deflection mirror
Code fragment technology

2/2

Integrated:
RS 232/485/422
multiNet
PROFIBUS DP
PROFINET IO/RT
Ethernet TCP/IP, UDP

10 – 30 V DC

IP 65

integrated

CE CDRH cUL US

BT 56, BT 59

Integrated field bus connectivity.
Code reconstruction technology (CRT).
"WebConfig" software integrated in the device permits configuration via USB interface without additional software. Multiple language menu-driven display. M12 connection technology. Integrated fieldbus connectivity for convenient fieldbus link and networking Code reconstruction technology (CRT) for reliable identification of damaged codes. Optional heating models to –35 °C.

BCL 90 Bar Code Readers



500 – 2100 mm

0.2 mm

800 scans/s adjustable
(600 – 1200 scans/s)

N, M, F

Single Line Scanner
Oscillating mirror
Code fragment technology
autoFocus

6/4

Integrated:
RS 232/485/422

**With connector unit
MA 90**
multiNet

**With connector unit
MA 200i**
PROFINET IO/RT, PROFIBUS DP,
INTERBUS, Ethernet TCP/IP, UDP,
IP, EtherCAT, DeviceNet, CANopen

18 – 30 V DC

IP 65

MA 31

CE

Ext. parameter memory

BT 90

Integrated autofocus
Code reconstruction technology (CRT).
Available as "CAX" (compact omnidirectional scanner).
Optionally as modular scanner portal (MSP) system.

RFID Systems

RFI 32 Stationary RFID Readers



Specifications

Working frequency

125 kHz

Max. RFID reading distance

80 mm

Max. bar code reading distance

–

Max. speed

0.6 m/s

Interfaces

Integrated:
RS 232

Connectivity

**With connector unit
MA 21**
multiNet

**With connector unit
MA 200i**
PROFINET IO/RT
PROFIBUS DP
INTERBUS
Ethernet TCP/IP, UDP
EtherCAT
DeviceNet
EtherNet/IP
CANopen

Function

RFID reading

Possible transponder types

– Disc
– High temperature proof up to
200 °C

Supply voltage

10–30 V DC

Protection class

IP 67

Certifications



Features

Compact RFID reading unit.
High protection class IP 67.
Mounting also in between
conveyor rollers.

RFM 12/32/62
Stationary RFID
Read/Write Systems



13.56 MHz

400 mm

–

6.0 m/s

Integrated:
RS 232

With connector unit
MA 21
multiNet

With connector unit
MA 200i
PROFINET IO/RT
PROFIBUS DP
INTERBUS
Ethernet TCP/IP, UDP
EtherCAT
DeviceNet
EtherNet/IP
CANopen

RFID reading/writing

- Disc
- High temperature proof up to 200 °C
- Smartlabel

10–30 V DC

IP 65/IP 67



Compact RFID write/read unit.
High protection class for tough industrial application.
Mounting also in between conveyor rollers.
RFM 32 is also available as device with Ex certification.

RFU 61/81
IM RFU 1
Stationary RFID
Read/Write Systems



868 MHz

5000 mm

–

Transponder-dependent
Integrated (IMRFU):
RS 232

With connector unit
MA 21
multiNet

With connector unit
MA 200i
PROFINET IO/RT
PROFIBUS DP
INTERBUS
Ethernet TCP/IP, UDP
EtherCAT
DeviceNet
EtherNet/IP
CANopen

RFID reading/writing

- Disc
- Smartlabel
- Onmatae

10–30 V DC

IP 65/IP 67



Compact RFID write/read unit.
High protection class for tough industrial application.

HFM 3500D
HFM 3520D
Mobile RFID
Read/Write Systems



13.56 MHz

30 mm

450 mm

–

Integrated:
RS 232/USB
Bluetooth

With connector unit
MA 21
multiNet

With connector unit
MA 200i
PROFINET IO/RT
PROFIBUS DP
INTERBUS
Ethernet TCP/IP, UDP
EtherCAT
DeviceNet
EtherNet/IP
CANopen

RFID reading/writing
Bar code reading

- Disc
- High temperature proof up to 200 °C
- Smartlabel

5 V DC/230 V AC (6 V DC batt.)

IP 54



CDRH

Mobile combination device for transponders and bar codes; designed especially for reading bar code information and subsequently writing this information to a transponder.
Cableless model with Bluetooth available.

HFU 4500
HFU 4520
Mobile RFID and
1D/2D-code Readers



868 MHz

450 mm

350 mm

–

Integrated:
RS 232/USB
Bluetooth

With connector unit
MA 21
multiNet

With connector unit
MA 200i
PROFINET IO/RT
PROFIBUS DP
INTERBUS
Ethernet TCP/IP, UDP
EtherCAT
DeviceNet
EtherNet/IP
CANopen

RFID reading/writing
Bar code reading
2D-code reading

- Disc
- Smartlabel
- Onmatae

5 V DC/230 V AC (6 V DC batt.)

IP 54



FCC

Mobile combination device for transponders, bar codes and 2D-codes; designed especially for reading bar code information and subsequently writing this information to a transponder.
Cableless model with Bluetooth available.

Modular Interfacing Units

MA 8 Point to Point



MA 2/MA 2L MA 100 Point to Point multiNet Slave



MA 4L/MA 4DL Point to Point multiNet Slave



Specifications

Connection
wiring

1 plug M12, 5 pin
2 sockets M12, 5 pin

Spring terminals, 5 PGs

Spring terminals, 5 PGs

Interfaces

RS 232
RS 485

RS 232
RS 485
multiNet slave
Service interface
RS 232
9-pin Sub-D

RS 232
RS 422
RS 485
multiNet slave

RS 232
RS 485
multiNet slave,
Service interface RS 232
9 pin Sub-D

Features

1 switching input
and 1 switching output

2/1 switching
input
2/1 switching
output
network address

1 switching input
1 switching
output
Network address
Termination

2/1 switching input
2/1 switching output
Network address
Automatic
parameter memory

Protection class

IP 67

IP 54

IP 54

IP 54/IP 65

Certifications

CE c UL US

CE c UL US

CE

CE

BCL 8

KB 008/direct



BCL 21

Direct



Direct



BCL 22

Direct



Direct



BCL 31

KB 031/
KB 040/direct



KB 031



BCL 32

KB 031/
KB 040/direct



KB 031/
KB 040/direct



BCL 90

KB 301-3000
(only MA 100)



BCL 300i

KB 500-3000-Y
(only MA 100)



BCL 500i

KB M12A-8P-
MA-3000



LSIS 122

KB JST



LSIS 4x2i

Direct



RFI/RFM

RFU

**Mobile Code
Reader**

BPS 8

KB 008/direct



The red dots denote assignment of the connector units to the relevant devices.
For other combination possibilities, see catalog.

MA 90

Point to Point
multiNet Slave



Spring terminals, 8 PGs

RS 232, RS 422,
RS 485 multiNet slave,
Service interface – RS 232
9 pin Sub-D

6 switching inputs
4 switching outputs
Network address
Optional external
parameter memory

IP 54



KB 090



MA 31

multiNet Master



Spring terminals, 5 PGs,
M12 connection sets available
(optional)

RS 232 – or
RS 422 –, TTY – Host,
multiNet master RS 485,
multiNet slave
Service interface RS 232
9 pin Sub-D

2 switching inputs
2 switching outputs
Network address
Automatic
parameter memory

IP 65



MA 200i



4x M12
1 x RS 232 connector

PROFIBUS DP
PROFINET IO/RT
Ethernet TCP/IP
EtherCAT*
DeviceNet*
EtherNet/IP*
CANopen*

Integrated SWITCH
Volt. IN/OUT
1 switching input
1 switching output

IP 65



KB JST-M12A-5P-3000
connection set



Direct



KB 031



KB-500-3000-Y

KB M12-8P-
MA-3000



KB JST-M12A-8P-Y-3000



Direct



KB-JST-3000



KB-JST-HS-300



KB JST-M12-5P-3000



MA 21

multiNet Slave
Protocol Converter



Spring terminals, 5 PGs,
M12 connection sets available
(optional)

RS 232,
RS 422 –, TTY – Host,
RS 485 multiNet slave,
Service interface – RS 232
9 pin Sub-D

Network address

IP 65



KB 008/direct



KB M12A-8P-
MA-3000



KB JST



Direct



KB-JST-3000

Stationary 2D-Code Reader

LSIS 220* Stationary 2D-Code Readers



LSIS 422i Stationary 2D-Code Readers



LSIS 422i Stationary 2D-Code Readers (C-mount model)



Typical applications

Code reading

Data Matrix, bar code, QR Code, PDF 417, Aztec, GS1 Databar and others

Data Matrix Code, bar code, Pharmacode

Data Matrix Code, bar code, Pharmacode

Sensor/cameras

CMOS (Global Shutter)

CMOS (Global Shutter)

CMOS (Global Shutter)

Resolution (pixel)

838 × 640

752 × 480

752 × 480

Focal point

127 mm

50 mm ... ∞ (focal length 8 mm)
75 mm ... ∞ (focal length 16 mm)

Depending on lens

Interfaces

Integrated:
RS 232
USB

Integrated:
Ethernet
RS 232

Integrated:
Ethernet
RS 232

Connectivity

With connector unit MA 21
multiNet

With connector unit MA 21
multiNet

With connector unit MA 21
multiNet

With connector unit MA 200i/MA 40
PROFINET IO/RT
PROFIBUS DP
INTERBUS
Ethernet TCP/IP, UDP

With connector unit MA 200i/MA 40
PROFINET IO/RT
PROFIBUS DP
INTERBUS

With connector unit MA 200i/MA 40
PROFINET IO/RT
PROFIBUS DP
INTERBUS

Digital inputs/outputs

1/1

8, configurable

8, configurable

Number of test routines

Memory capacity for 1 parameter set in the camera

Max. 100 in camera memory

Max. 100 in camera memory

Configuration/operating system

Configuration via bar code or via PC with setup program

Configuration via PC using standard Web browser without software to be installed additionally (webConfig tool)

Configuration via PC using standard Web browser without software to be installed additionally (webConfig tool)

Options

Reading of directly marked Data Matrix Codes. Multiple code reading (up to 99 codes), display of the code content, evaluation of the code quality of printed codes, reference code comparison, image memory.

Reading of directly marked Data Matrix Codes. Multiple code reading (up to 99 codes), display of the code content, evaluation of the code quality of printed codes, reference code comparison, image memory.

Dimensions, W × H × D

47 × 40 × 32 mm

75 × 113 × 55 mm

75 × 113 × 106 mm

Certifications

CE UL US

CE UL US

CE UL US

Features

Camera system for omnidirectional scanning of 2D-codes and bar codes (even in movement). Compact housing, integrated lighting and decoder. Protection class IP 65.

Camera system for omnidirectional scanning of 2D-codes and bar codes (even in rapid movement). Compact housing, integrated illumination (depends on type: white, IR or RGBW) and decoder. Protection class IP 65/IP 67. Flexible use through motor-driven focus adjustment.

Camera system for omnidirectional scanning of 2D-codes and bar codes (even in rapid movement). Compact housing and decoder. Protection class IP 65/IP 67. Lens and external illumination required.

* available starting in mid-2012

Industrial image processing

LSIS 412i
Smart Camera



LSIS 462i
Smart Camera



vision
POWERBOX
Industrial Image
Processing Systems



Similar to illustration

Typical applications

Presence/completeness monitoring

X

X

X

Dimension/position monitoring

X

X

X

Position and type detection

X

X

X

Character reading

X

Code reading

Data Matrix, bar code, Pharmacode

Data Matrix, PDF 417, QR-Code

Measurement

X

Print quality monitoring

X

Color detection

X

Pattern detection

X

Sensor/cameras

CMOS (Global Shutter)

CMOS (Global Shutter)

CCD/GigE

Resolution (pixel)

752 × 480

752 × 480

656 × 494, 1392 × 1040, 2448 × 2050 (color or monochromatic)

Focal point

50 mm ... ∞ (focal length 8 mm)
75 mm ... ∞ (focal length 16 mm)
Depends on lens w/ C-mount models

50 mm ... ∞ (focal length 8 mm)
75 mm ... ∞ (focal length 16 mm)
Depends on lens w/ C-mount models

Depending on lens

Interface

Integrated:
Ethernet
RS 232

Integrated:
Ethernet
RS 232

Integrated:
Ethernet
RS 232

Connectivity

With connector unit
MA 200i
PROFINET IO/RT
PROFIBUS DP
INTERBUS

With connector unit
MA 200i
PROFINET IO/RT
PROFIBUS DP
INTERBUS

Digital inputs/outputs

8, configurable

8, configurable

16/16

Fast EtherNet

Yes

Yes

GigE

Optional

Cable, mounting devices,
external illumination

Cable, mounting devices,
external illumination

Number of test routines

Max. 100

Max. 100

No practical restriction in number
of storable test programs

Configuration/
operating system

Configuration via PC using
standard Web browser
(webConfig tool)

Configuration via PC using
standard Web browser
(webConfig tool)

Microsoft® Windows®

Options

Dimensions, W × H × D

75 × 113 × 55 mm

75 × 113 × 55 mm

Remote maintenance

320 × 164 × 307 mm

Certifications

CE C UL US

CE C UL US

CE

Features

Very well suited for industrial use through glass or plastic window, metal housing and homogeneous integrated illumination (depends on type: white, IR or RGBW). Protection class IP 65/67. Flexible use through motor-driven focus adjustment.

Very well suited for industrial use through glass or plastic window, metal housing and homogeneous integrated illumination (depends on type: white, IR or RGBW). Protection class IP 65/67. Flexible use through motor-driven focus adjustment.

Flexible image processing for complex and interlinked tasks. Multi-camera operation at a PC. Storage of: error images, camera parameters, results in database; visualization; sequential control; AIM verifier; camera calibration.

Optical Data Transmission Systems

DDLS 78 Optical Data Transmission



DDLS 200 Optical Data Transmission



DLSP 160S Optical Data Transmission



Specifications

Data transmission

Range

Light source

Max. transmission rate

Interfaces-Host

Supported protocols

Protection class

Supply voltage

Operating temperature

Certifications

Features

Serial

200 m

Red light/infrared LED

38.4 kbits/s

TTY
RS 232
RS 422
RS 485

PROFIBUS
SINEC L2
Transparent mode

IP 65

12 – 30 V DC

–10 °C to +50 °C
(–35 °C to +60 °C
with optics heating)



Full-duplex transmission in one housing.
Galvanically isolated interfaces.
Usable with optics heating up to –35 °C.

Serial

500 m

Infrared LED

2000 kbits/s

RS 422
RS 485
Fiber-optic cable

PROFIBUS (DP/FMS/MPI)
Interbus-S (copper/fiber optics),
Rockwell Automation (DH+;
Remote I/O), DeviceNet, CANopen,
EtherNet, PROFINET

IP 65

18 – 30 V DC

–5 °C to +50 °C
(–30 °C to +50 °C
with optics heating)



No-contact, wear-free data transmission.
Not influenced by ambient light.
Integrated mounting and alignment plate.
Optionally with heating.
All common internationally used interfaces available.
PROFIBUS and EtherNet variants with M12 connector.

Parallel

2.6 m

Infrared LED

≤ 400 µs

Parallel
2 × 8 I/Os / 24 V DC

IP 65

16 – 35 V DC

–20 °C to +60 °C



Transmitter and receiver in one housing (same device).
Minimal space requirement.
Parallel data transmission.

Optical Distance Measurement/ Positioning

AMS 300i Optical Distance Measurement



BPS 8 Optical Positioning



BPS 34/37 Optical Positioning



Specifications

Range

40/120/200/300 m

Interfaces

Integrated:
PROFIBUS and SSI
RS 232 and RS 422
RS 485
PROFINET
DeviceNet
EtherNet/IP
CANopen
EtherCAT

10,000 m

Integrated:
RS 232

10,000 m

Integrated:
PROFIBUS
SSI

Connectivity

PROFINET IO/RT
Ethernet TCP/IP, UDP

**With connector unit
MA 8-01**
RS 485

**With connector unit
MA 200i**
EtherCAT
DeviceNet
EtherNet/IP
CANopen

Functional principle

Against reflector

Against bar code tape

Against bar code tape

Measurement value output

1.6 ms

3.3 ms

2 ms

Integration time

~8 ms

~13 (~6) ms

~8 (~4) ms

Reproducibility

0.3/0.5/0.7 mm, (1 sigma/1.5 ms)

± 1 (2) mm to taught points

± 1 (2) mm to taught points

Accuracy

±2/2/3/5 mm

Protection class

IP 65

IP 67

IP 65

Light source

Red light laser

Red light laser

Red light laser

Supply voltage

18–30 V DC

5 V DC (24 V DC via MA 8-01)

10–30 V DC

Operating temperature

–5 °C to +50 °C
(–30 °C to +50 °C
with optics heating)

0 °C up to +40 °C

0 °C to +50 °C
(–30 °C to +40 °C
with optics heating)

Options

Speed measurement and monitoring

Customer-specific configuration facility

Speed measurement and monitoring

Certifications

CE CDRH C UL US

CE CDRH C UL US

CE CDRH C UL US

Features

Absolute measurement system with very high accuracy, tested by the Physikalisch Technische Bundesanstalt (German Metrology Institute).
Simultaneous use of the PROFIBUS and SSI.
Device model with Interbus and RS 232 interface.
Easy programming via extensive GSD file.
Optionally with heating.
Multiple language menu-driven display.

Compact housing and protection class IP 67.
Customer-specific configuration.
Extremely simple installation using special fastening unit.
Innovative positioning on corners, inclines and diverters.

Integrated PROFIBUS or SSI interface.
Integrated speed measurement
Innovative positioning on corners, inclines and diverters.
Optionally with heating.
Convenient programming of the PROFIBUS model via comprehensive GSD file.

Mobile Code Reader

Z-3110 Bar Code Hand-Held Readers



IT 1300g Bar Code Hand-Held Readers



IT 3820 Bar Code Hand-Held Readers



Specifications

Reading method

CCD Touchreader

Reading distance

0 – 20 mm

Interfaces

Integrated:
RS 232/USB
Keyboard Wedge PS 2

Connectivity

With connector unit
MA 21
multiNet

With connector unit
MA 200i/MA 40
PROFINET IO/RT
PROFIBUS DP
INTERBUS
Ethernet TCP/IP, UDP

Line imager

10 – 660 mm

Integrated:
RS 232/USB
Keyboard Wedge PS 2

With connector unit
MA 21
multiNet

With connector unit
MA 200i/MA 40
PROFINET IO/RT
PROFIBUS DP
INTERBUS
Ethernet TCP/IP, UDP

Line imager with Bluetooth

25 – 1120 mm

Integrated:
RS 232/USB
Keyboard Wedge PS 2

With connector unit
MA 21
multiNet

With connector unit
MA 200i/MA 40
PROFINET IO/RT
PROFIBUS DP
INTERBUS
Ethernet TCP/IP, UDP

Accessories

Cable for: RS 232, USB,
Keyboard-Wedge; holder, power
supply unit

Cable for: RS 232, USB,
Keyboard-Wedge; desktop support,
wall support, power supply unit

Cable for: RS 232, USB,
Keyboard-Wedge; desktop support,
wall support, power supply unit

Supply voltage

5 V DC $\pm$ 10%

4.5 – 5.5 V DC

9 V DC

Applications

For bar code reading on
contact

Bar codes
Protection class IP 41

Bar codes
Protection class IP 41

Types of codes

Bar codes

Bar codes

Bar codes

Certifications



Features

Built-in decoder.
Display LED and acoustic signal
output for accomplished reading
Lightweight and robust housing.

Large reading field for bar code
detection.
Ergonomic and robust housing.
Operating temperature
0 °C ... 50 °C.

Large reading field for bar code
detection.
Ergonomic and robust housing.
Operating temperature
0 °C ... 50 °C.

IT 3800i
IT 3820i
Bar Code Hand-Held
Readers



Line imager with Bluetooth
16.5 – 2080 mm

Integrated:
RS 232/USB
Keyboard Wedge PS 2

With connector unit
MA 21
multiNet

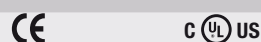
With connector unit
MA 200i/MA 40
PROFINET IO/RT
PROFIBUS DP
INTERBUS
Ethernet TCP/IP, UDP

Cable for: RS 232, USB,
Keyboard-Wedge; desktop support,
wall support, power supply unit

4,5 – 14 V DC 9 V DC

Tough industrial use
Protection class IP 54

Bar codes



Large reading field for bar code
detection.
Ergonomic and robust housing.
Operating temperature from
–30 °C ... 50 °C (IT 3800i).
0 °C ... 50 °C (IT 3820i).

IT 1900
IT 1902
2D-Code Hand-Held
Readers



Surface imager with Bluetooth
0 – 561 mm

Integrated:
RS 232/USB
Keyboard Wedge PS 2

With connector unit
MA 21
multiNet

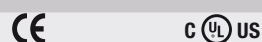
With connector unit
MA 200i/MA 40
PROFINET IO/RT
PROFIBUS DP
INTERBUS
Ethernet TCP/IP, UDP

Cable for: RS 232, USB,
Keyboard-Wedge; holder, power
supply unit, base station

4.5 – 5.5 V DC

For high-contrast codes
Protection class IP 41

Bar codes and 2D-codes



Large reading field for detection of
high-contrast codes.
Operating temperature
0 °C ... 50 °C
Ergonomic and robust housing.

IT 4800
IT 4820i
2D-Code Hand-Held
Readers



Surface imager with Bluetooth
53 – 333 mm

Integrated:
RS 232/USB
Keyboard Wedge PS 2

With connector unit
MA 21
multiNet

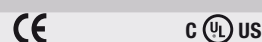
With connector unit
MA 200i/MA 40
PROFINET IO/RT
PROFIBUS DP
INTERBUS
Ethernet TCP/IP, UDP

Cable for: RS 232, USB,
Keyboard-Wedge; holder, power
supply unit, base station ST 2020

4,5 – 14 V DC 9 V DC

Tough industrial use
High-contrast codes
Protection class IP 54

Bar codes and 2D-codes



Large reading field for detection of
high-contrast codes.
Operating temperature
0 °C ... 50 °C
Ergonomic and robust housing.

FIS 6170
2D-Code Hand-Held
Readers



Surface imager
0 – 51 mm

Integrated:
RS 232/USB

With connector unit
MA 21
multiNet

With connector unit
MA 200i/MA 40
PROFINET IO/RT
PROFIBUS DP
INTERBUS
Ethernet TCP/IP, UDP

Cable for: USB, RS 232;
Power supply unit

5 V DC

Reading of directly marked codes
(laser or matrix printed) with low
contrast

Bar codes and directly marked
2D-codes



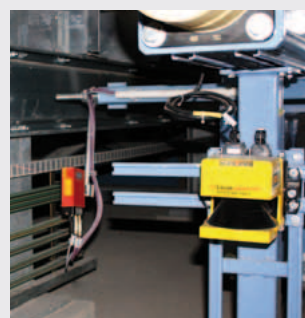
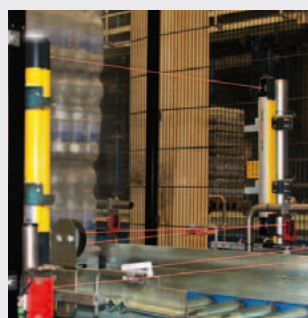
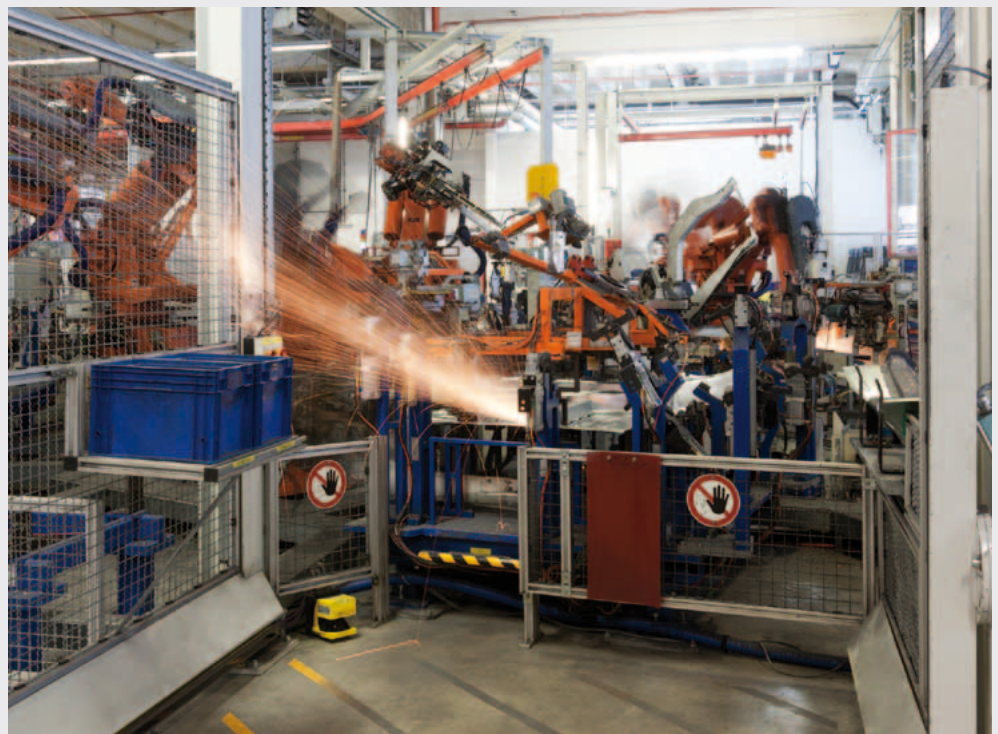
High resolution for directly marked
parts (laser or matrix printed)
and labels.
Operating temperature
0 °C ... 50 °C
Ergonomic and robust housing.



Safety Sensors Safety Systems Safety Services

Integrative solutions for personnel protection of your production and logistics operations.

The core requirements of modern systems are productivity, a high level of automation and product flexibility. Our **Safety Laser Scanners** and **Safety Light Curtains**, as an integral part of these systems, meet this challenge – not least of all due to the integrated AS-i Safety interface. Our **Light Beam Safety Devices** and our mechanical and magnetic **Safety Switches** offer, in combination with our **Safety Relays**, effective personnel protection in accordance with international safety standards without obstructing workflows. All our safety devices thereby enable economical integration into various machine and system concepts. We of course provide support in their planning, start-up and inspection with our **safety services**.



Safety Laser Scanners

RS4-6M Type 3 Safety Laser Scanners



RS4-4E Type 3 Safety Laser Scanners



RS4-2E Type 3 Safety Laser Scanners



Specifications

Type in accordance with EN IEC 61496

SIL in accordance with IEC 61508 and EN IEC 62061 (SILCL)

Performance Level (PL) in accordance with EN ISO 13849-1

Resolution (adjustable)

Range

Number of detection zones

Dimensions, W x H x D

Safety-related switching outputs (OSSD)

Connection technology

Certifications

Functions

Features

Type 3

SIL 2

PL d

30/40/50/70/150 mm

1.6/2.2/2.8/6.25/6.25 m

8

140 x 155 x 135 mm

2 PNP transistor outputs
AS-i Safety Interface, PROFI-safe Interface

Sub-D15, Sub-D9 for configuration, safety bus systems: M12 plug, IR interface for parametering



Start/restart interlock (RES), selectable. Monitored detection zone pair changeover. Warning zone monitoring. Additional alarm output

Function package

MotionMonitoring

Movement monitoring of side-tracking skates

Safeguarding of expansive danger areas and broad access points. Automatic configuration on device exchange with intelligent ConfigPlug. Any type of detection/warning zone contours and configurations. Zone pair changeover possible during operation. Compact design and easy-to-use software.

Type 3

SIL 2

PL d

30/40/50/70/150 mm

1.6/2.2/2.8/4.0/4.0 m

8

140 x 155 x 135 mm

2 PNP transistor outputs
AS-i Safety Interface, PROFI-safe Interface

Sub-D15, Sub-D9 for configuration, safety bus systems: M12 plug, IR interface for parametering



Start/restart interlock (RES), selectable. Monitored detection zone pair changeover. Warning zone monitoring. Additional alarm output

Function package Extended

Vertical access guarding with reference boundary monitoring

Danger zone guarding, point of operation guarding, access guarding. Automatic configuration on device exchange with intelligent ConfigPlug. Any type of detection/warning zone contours and configurations. Zone pair changeover possible during operation. Compact design and easy-to-use software.

Type 3

SIL 2

PL d

70/150 mm

2.15 /2.15 m

4

140 x 155 x 135 mm

2 PNP transistor outputs

Sub-D15, Sub-D9 for configuration



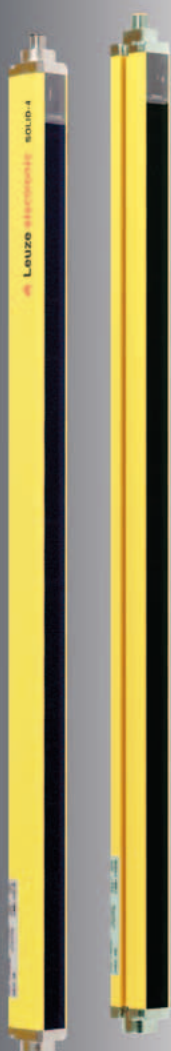
Start/restart interlock (RES), selectable. Monitored detection zone pair changeover. Warning zone monitoring. Additional alarm output

Function package Basic

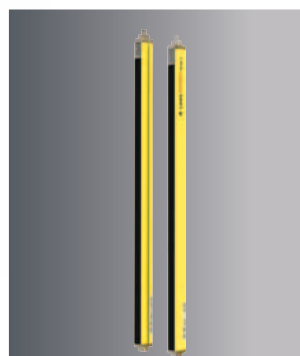
Danger zone guarding on small systems

Horizontal danger zone guarding. Compatible with all other devices of the RS4 family. Automatic configuration on device exchange with intelligent ConfigPlug. Any type of detection/warning zone contours and configurations. Zone pair changeover possible during operation. Compact design and easy-to-use software.

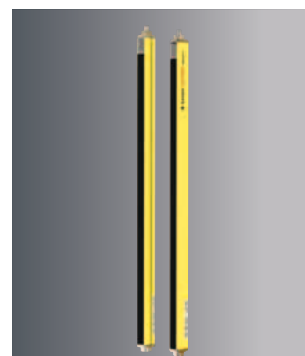
Safety Light Curtains



SOLID-4/SOLID-4E Type 4 Safety Light Curtains



SOLID-2/SOLID-2E Type 2 Safety Light Curtains



Specifications

Type in accordance with
EN IEC 61496

SIL in accordance with
IEC 61508 and
EN IEC 62061 (SILCL)

Performance Level (PL)
in accordance with
EN ISO 13849-1

Resolution

Range

Protective field height
(type-dependent)

Profile cross-section

Safety-related switching
outputs (OSSD)

Connection technology

Certifications

Functions

Features

Type 4

SIL 3

PL e

14/20/30/40/90 mm

6/14/9/20/20 m

150 ... 1800 mm

30 × 34 mm

2 PNP transistor outputs

M12 plug



2 transmission channels,
selectable.
Start/restart interlock.
Dynamic contactor monitoring
(EDM). 7-segment display.
Cascadable.

Fault-free operation of adjacent
devices with selection of different
transmission channels.
Slim and robust aluminum housing
(30 mm × 34 mm).
Easy function selection with
external wiring.
Function extension with MSI Safety
Relays.

Type 2

SIL 2

PL d

20/30/40/90 mm

15/10/20/20 m

150 ... 1800 mm

30 × 34 mm

2 PNP transistor outputs

M12 plug



2 transmission channels,
selectable.
Start/restart interlock.
Dynamic contactor monitoring
(EDM). Integrated cyclical
testing (100 ms). 7-segment
display.

Slim and robust aluminum housing
(30 mm × 34 mm).
Easy function selection with
external wiring.
Function extension with MSI Safety
Relays.

Safety Light Curtains

COMPACTplus Type 4 Safety Light Curtains



Type 4

SIL 3

PL e

14/30/50/90 mm

6/18/18/18 m

150 ... 3000 mm

52 x 55 mm

2 PNP transistor outputs,
2 relay outputs
AS-i Safety Interface
PROFIsafe Interface

Cable gland
Hirschmann plug
Brad Harrison plug
M12 plug



2 transmission channels,
selectable. Cascadable. Start/
restart interlock. Dynamic
contactor monitoring (EDM).
Parallel/sequential muting with
override. Blanking (with teach-in),
reduced resolution. Operating
mode, 1-cycle or 2-cycle control.

Integrated control and monitoring
functions mean external control
devices not required.

Plug-in module with saved device
parameters for fast device
exchange.

M12 local connection socket for
connecting local sensors and
signal devices.

Optimum application adjustment
with SafetyLab configuration and
diagnosis software.

Specifications

Type in accordance with EN IEC 61496

SIL in accordance with IEC 61508 and
EN IEC 62061 (SILCL)

Performance Level (PL) in accordance with
EN ISO 13849-1

Resolution

Range

Protective field height (type-dependent)

Profile cross-section

Safety-related switching outputs (OSSDs)

Connection technology

Certifications

Functions

Features



Transceivers and Multiple Light Beam Safety Devices



MLD 500 Type 4 Multiple Light Beam Safety Devices



Type 4

SIL 3

PL e

2/3/4

500/400/300 mm

0.5 ... 50 m
(transmitter-receiver system)
20 ... 70 m
(transmitter-receiver system)
0.5 ... 6 m
(transceiver system, 3 beam)
0.5 ... 8 m
(transceiver system, 2 beam)

52 × 65 mm

2 PNP transistor outputs
AS-i Safety Interface

M12 plug



Automatic start/restart, start/
restart interlock (RES) selectable,
contactor monitoring (EDM)
selectable, 2-sensor muting,
(parallel, sequential), configurable
operating modes, laser alignment
aid (optional for transmitter-
receiver systems)

Specifications

Type in accordance with
EN IEC 61496

SIL in accordance with
IEC 61508 and
EN IEC 62061 (SILCL)

Performance Level (PL)
in accordance with
EN ISO 13849-1

No. of beams

Beam distance

Range
(type-dependent)

Profile cross-section

Safety-related switching
outputs (OSSD)

Connection technology

Certifications

Functions

Features

Version available as 3-beam
transceiver.

Integrated muting function, no
additional muting module is
necessary.

The configuration is simply
performed by means of wiring, i. e.
no software, PC or Dip switch are
necessary.

The use at ambient temperatures
as low as -30°C is possible.

Options: integrated laser alignment
aid, integrated muting indicator,
7-segment display

MLD 300 Type 2 Multiple Light Beam Safety Devices



Type 2

SIL 2

PL d

2/3/4

500/400/300 mm

0.5 ... 50 m
(transmitter-receiver system)
20 ... 70 m
(transmitter-receiver system)
0.5 ... 6 m
(transceiver system, 3 beam)
0.5 ... 8 m
(transceiver system, 2 beam)

52 × 65 mm

2 PNP transistor outputs
AS-i Safety Interface

M12 plug



Automatic start/restart, start/
restart interlock (RES) selectable,
contactor monitoring (EDM)
selectable, 2-sensor muting,
(parallel, sequential), configurable
operating modes, laser alignment
aid (optional for transmitter-
receiver systems)

Version available as 3-beam
transceiver.

Integrated muting function, no
additional muting module is
necessary.

The configuration is simply
performed by means of wiring, i. e.
no software, PC or Dip switch are
necessary.

The use at ambient temperatures
as low as -30°C is possible.

Options: integrated laser alignment
aid, integrated muting indicator,
7-segment display

Single Light Beam Safety Devices



MLD 500 Type 4 Single Light Beam Safety Devices



Specifications	
Type in accordance with EN IEC 61496	Type 4 (self-monitoring)*
Operating range	0.5 ... 70 m 20 ... 100 m
Operating voltage U_B	+24 V DC $\pm$ 20 %
Operating temperature	-30 ... +55 °C
Dimensions, W x H x D	52 x 65 x 193 mm
Housing	
Switching outputs	2 PNP transistor outputs (OSSDs)
Connection technology	M12 plug AS-i Safety Interface
Certifications	  
Functions	
Automatic start/restart, start/restart interlock (RES) selectable, contactor monitoring (EDM) selectable, 2-sensor muting, (parallel, sequential), configurable operating modes, laser alignment aid (optional).	
Features	
The use at ambient temperatures as low as -30°C is possible. Protection class IP 67. Integrated laser alignment aid as an option. The configuration is simply performed by means of wiring, i. e. no software, PC or Dip switch are necessary.	

* For safety classification see MLD 500 Multiple Light Beam Safety Device

SLSR 25B

Type 2 Single Light
Beam Safety Devices



Type 2 in combination with a
safety monitoring device

0.5 ... 20 m

10 ... 30 V DC
(incl. residual ripple)

–30 ... +55 °C

15 × 51.3 × 28.8 mm

Plastic

2 push-pull
transistor outputs

2 m cable
M8 plug
M12 plug



LED indicator. Activation input for
test and series connection. Active
ambient light suppression (A²LS).

Single beam safety device with
high performance reserve.
Compact plastic housing with
protection class IP 67.
Wide voltage range 10 to 30 V.
All common connection variants.

SLSR 46B

Type 2 Single Light
Beam Safety Devices



Type 2 in combination with a
safety monitoring device

0.5 ... 40 m

10 ... 30 V DC
(incl. residual ripple)

–30 ... +55 °C

18.5 × 77 × 43 mm

Plastic

2 push-pull
transistor outputs

Cable 2 m
M12 plug



LED indicator. Activation input for
test and series connection. Active
ambient light suppression (A²LS).

Single beam safety device with
high performance reserve.
Compact plastic housing with
protection class IP 67.
Wide voltage range 10 to 30 V.
Clearly visible alignment indicator
in the front screen.

SLS 96

Type 2 Single Light
Beam Safety Devices



Type 2 in combination with a
safety monitoring device

0 ... 50 m (infrared light)
0 ... 30 m (red light)

10 ... 30 V DC
(incl. residual ripple)

–20 ... +60 °C

30 × 90 × 70 mm

Metal
Plastic

PNP transistor output

Cable gland
M12 plug



LED indicator. Activation input for
test and series connection.

High performance reserve in the
visible red light and infrared light
range.
Wide voltage range from 10 to
30 V with PNP transistor output.
Optics heating for use with low
temperatures (SLS 96 M/P-1071).
Variants for multiple axis operation
(SLS 96 K/P-1207).

SLS 318

Type 2 Single Light
Beam Safety Devices



Type 2 in combination with a
safety monitoring device

0 ... 10 m

10 ... 30 V DC

–25 ... +65 °C

Cylindrical construction, M18 × 1

Plastic
Metal housing on request

PNP transistor output

Cable, 2 m
M12 plug



LED indicator. Activation input for
test and series connection.

Protection class IP 67.
2 antivalent push-pull switching
outputs for light/dark switching
and as control function.
Visible red light in straight optics.
Switching frequency 1000 Hz.
Adjustable sensitivity.

AS-i-Safety Product Range

RS4/AS-i Type 3 Safety Laser Scanners



MLD 500/AS-i Type 4 Multiple Light Beam Safety Devices



MLD 500/AS-i Type 4 Single Light Beam Safety Devices



Specifications

Type in accordance with
EN IEC 61496

SIL in accordance with
IEC 61508 and
EN IEC 62061 (SILCL)

Performance Level (PL)
in accordance with
EN ISO 13849-1

AS-i profile

Slave address

Connection technology

Current consumption
from AS-i circuit

Sensor response time

Restart delay time

Certifications

**Function extension
with ASM1/ASM1E
Safety Monitor**

Features

Type 3

SIL 2

PL d

Safe slave

1 ... 31, programmable
(factory setting = 0)

M12 plug, IR interface for
parametering

50 mA

85 ms (corresponds to 2 scans),
up to 16 scans can be set
(645 ms)

Min. 160 ms
(after detection zone release)



Start/restart interlock. Dynamic
contactor monitoring (EDM).
Diagnostic data transfer via
AS-interface.

Integrated AS-i interface for
direct M12 connection to the
AS-interface network.
Bus addressing with AS-interface
address programming device
directly via M12 device plug.
Diagnostic data transmission and
warning zone monitoring via
AS-interface bus.
Any type of detection/warning zone
contours and configurations.
Zone pair changeover possible
during operation.
3 function packages.

Type 4

SIL 3

PL e

Safe slave

1 ... 31, programmable
(factory setting = 0)

M12 plug

50 mA (transmitter)
Max. 140 mA (receiver,
type-dependent)

25 ms

100 ms or 500 ms



Start/restart interlock, contactor
monitoring selectable (EDM),
2-sensor parallel muting, 2-sensor
sequential muting, muting-timeout
extension

Integrated AS-i interface for
direct M12 connection to the
AS-interface network.
Safe data transfer of the OSSD
signals via AS-Interface.
Device swap-out without PC via
SERVICE function of the AS-i safety
monitor.
Integrated muting indicator,
direct control without unique
AS-i address possible.

Type 4

SIL 3

PL e

Safe slave

1 ... 31, programmable
(factory setting = 0)

M12 plug

50 mA (transmitter)
Max. 140 mA (receiver,
type-dependent)

25 ms

100 ms or 500 ms



Start/restart interlock, contactor
monitoring selectable (EDM)

Integrated AS-i interface for
direct M12 connection to the
AS-interface network.
Safe data transfer of the OSSD
signals via AS-Interface.
Device swap-out without PC via
SERVICE function of the AS-i safety
monitor.
Integrated muting indicator,
direct control without unique
AS-i address possible.

COMPACTplus/AS-i Safety Light Curtains



ASKM1 AS-i Coupling Modules for Safety Sensors



ASKM2 AS-i Coupling Module for Safety Light Curtains SOLID-2 and SOLID-4E



Specifications

Type in accordance with
EN IEC 61496

SIL in accordance with
IEC 61508 and
EN IEC 62061 (SILCL)

Performance Level (PL)
in accordance with
EN ISO 13849-1

AS-i profile

Slave address

Connection technology

Current consumption
from AS-i circuit

Sensor response time

Restart delay time

Certifications

Function extension
with ASM1/ASM1E
Safety Monitor

Features

Type 4

SIL 3

PL e

Safe slave

1 ... 31, programmable
(factory setting = 0)

M12 plug, IR interface for
parametering

40 mA

10 ... 66 ms

20 ... 5,000 ms, can be set with
software, SafetyLab, factory
setting 100 ms (after protective
field release)



Start/restart interlock. Dynamic
contactor monitoring (EDM).
Diagnostic data transfer via
AS-interface.

Integrated AS-i interface for
direct M12 connection to the
AS-interface network.
Bus addressing with AS-interface
address programming device
directly via M12 device plug.
Diagnostics data transfer, muting
sensors status, muting active,
weak signal via AS-interface.
Device swap-out without PC
via SERVICE function of the
AS-i safety monitor.
Direct connection of muting
sensors, reset button or muting
indicator on the receiver or via
external connection module.
Muting restart function possible
via AS-interface by calling up
AS-i IC parameters.

Safe slave

1 ... 31, programmable
(factory setting = 0)

M12 plug for sensors, clamping
technology for AS-i flat cable

≤ 45 mA

≤ 270 mA



Connectable sensors, control
devices with contact-based outputs.
Safety Switch, 1 and 2-channel.
E-STOP command devices, 1 and
2-channel. Safety sensors with
relay outputs, 1 and 2-channel.

Safe AS-interface network device
for connecting 1 or 2 safety
sensors with contact-based
outputs.
LED indicators: AS-i status, inputs.
AS-interface addressing via
integrated addressing port.
Simple bus connection with
AS-i clamping technology.
Protection class IP 67, mounting
plate for DIN rail and screw-on
mounting.

SIL 3

Safe slave

1 ... 31, programmable
(factory setting = 0)

M12 plug for sensors, clamping
technology for AS-i flat cable

≤ 270 mA

≤ 270 mA



Connectable protective sensors:
Safety Light Curtain SOLID-2,
Safety Light Curtain SOLID-4E

Safe AS-interface network device
for the connection of 1 Leuze
electronic Safety Light Curtain
SOLID-2 or SOLID-4E.
LED indicators: AS-i status, inputs.
Fault message retrievable via
AS-interface.
AS-interface addressing via
integrated addressing port.
Simple bus connection with
AS-i clamping technology.
Mounting plate for DIN rail and
screw-on mounting.

AS-i-Safety Product Range



Specifications

SIL in accordance with IEC 61508 and EN IEC 62061 (SILCL)

Performance Level (PL) in accordance with EN ISO 13849-1

Safety category in accordance with EN ISO 13849

Stop category in accordance with EN IEC 60204-1

Supply voltage

System reaction time

Protection class

Number of safety monitors per AS-interface network

Certifications

Functions

Features

ASM1/ASM1E AS-i Safety Monitors Category 4



SIL 3

PL e

4

0 and 1

24 V DC, $\pm 15\%$

Max. 40 ms (monitor without sensor reaction time)

IP 20

4 (with maximum 31 integrated AS-i slaves)



Emergency STOP monitoring functions. Start/restart interlock. Dynamic contactor monitoring (EDM). Muting (2-sensor parallel, 4-sensor sequential), 1- or 2-channel OSSD relay outputs, LED status indicator. System signal output.

Up to 31 safe AS-i slaves can be connected.
Freely selectable assignment (Drag&Drop) of the sensors to OSSDs with "asimon" PC software.
48 logic devices (e.g. OR, AND, FLIPFLOP) and turn on/off delays can be configured for the monitoring devices.
RS 232 interface for PC-supported system configuration and system diagnostics as well as configuration data transfer to replacement device.
Immediate switch-off STOP 0 and delayed switch-off STOP 1 of the OSSDs can be configured.
Teach-in SERVICE button for automatic system integration of AS-i sensors on sensor exchange.

ASM2/ASM2E AS-i Safety Monitors Category 4



SIL 3

PL e

4

0 and 1

24 V DC, $\pm 15\%$

Max. 40 ms (monitor without sensor reaction time)

IP 20

4 (with maximum 31 integrated AS-i slaves)



Emergency STOP monitoring functions. Start/restart interlock. Dynamic contactor monitoring (EDM). Muting (2-sensor parallel, 4-sensor sequential), 1- or 2-channel OSSD relay outputs, LED status indicator. System signal output.

Safe activation of safe AS-i actors with the same safe AS-i address.
Primary start and E-STOP functions via safe coupling of neighboring AS-i networks.
Auxiliary signals for start/restart interlock.
Error reset of the AS-i actor.
In addition, all functions and features of the ASM1E Safety Monitor are available.

Magnetically Coded Sensors

MC388
Sensor, cubic



MC336
Sensor, cubic



MC330
Sensor, cylindrical



Specifications

Type	Locking device without guard interlocking in acc. with EN 1088	Locking device without guard interlocking in acc. with EN 1088	Locking device without guard interlocking in acc. with EN 1088
Category in accordance with EN IEC 13849-1	Up to 4 (depending on the number of sensors)	Up to 4 (depending on the number of sensors)	Up to 4 (depending on the number of sensors)
Performance Level (PL) in accordance with EN ISO 13849-1	Up to e (depending on the number of sensors)	Up to e (depending on the number of sensors)	Up to e (depending on the number of sensors)
Dimensions (housing)	88 × 25 × 13 mm	36 × 26 × 13 mm	M30 × 36 mm
Assured switching distances	< 6 mm, > 13 mm, > 30 mm	< 3 mm, > 8 mm, > 11 mm	< 6 mm, > 12 mm, > 14 mm
Switching tolerance	± 1 mm	± 1 mm	± 1 mm
Contact type	1NO/1NC	1NO/1NC	1NO/1NC
Short circuit protection	By means of MSI-MC310 Safety Relay or MSI 100, MSI 200	By means of MSI-MC310 Safety Relay or MSI 100, MSI 200	By means of MSI-MC310 Safety Relay or MSI 100, MSI 200
Min. approach speed of actuator towards sensor	50 mm/s	50 mm/s	50 mm/s
Response time	3 ms	3 ms	3 ms
Certifications	CE c UL US TÜV	CE c UL US TÜV	CE c UL US TÜV

Functions

Safety system in combination with an evaluation unit such as the MSI-MC310 Safety Relay or the MSI 100 or MSI 200 Safety Controller. Integration in control circuits up to category 4 in accordance with EN ISO 13849.

such as MC388

such as MC388

Features

Not sensitive to dust, humidity and the like (dirt level 3 in accordance with EN 60947-1).
Highly tamperproof.
Approach actuation directions lengthwise, high, deep.
Flexible connection via M8 plug, PVC or PUR connection cable (2 m, 5 m, 10 m), each firmly integrated in the housing.
Integrated compact design.
Large switching hysteresis (tolerant in event of vibrations or warped doors).
Delivery contents including actuator and screws/lock ring.

such as MC388

such as MC388

Safety Switches and Safety Locking Devices



S20, S200 Safety Switches



S300 Safety Position Switch



Specifications

Type

Locking device without guard interlocking in acc. with EN 1088

Locking device without guard interlocking in acc. with EN 1088

Housing / Protection class

Glass fiber reinforced plastic (S20) or metal (S200) / both IP 67

Glass fiber reinforced plastic or metal, both IP 67

Actuator

Series (S20: AC-ANxx, S200: AC-AHxx), external: straight, angular, resilient, alignable

Plunger, roller, lever, porcelain lever

Actuation

1 × above, 4 × side (90°)

1 × above, 4 × side (90°), 360°, switching direction left-right one side, both sides

Locking type, -force

10 N, 30 N

Connection technology

M20 × 1.5 cable entry (S20: optional 3-way), M12 plug

M20 × 1.5 cable entry (1- or 3-way), M12 plug

Certifications

CE  c  

CE  c  

Functions

Integration in control circuits up to category 4 in accordance with EN ISO 13849

Integration in control circuits up to category 4 in accordance with EN ISO 13849, stop command with automatic or manual forced actuation

Features

Easy mounting with standard construction.
Universal use with 5 actuator approach directions.
Various actuators for different installation conditions and applications from normal duty (S20) to heavy duty (S200).
Self-centering with funnel-shaped entry opening.
Large double-bridge contacts for long service life (S200).

Metal housing for "heavy duty" applications.
Switching direction selectable.
Universal use with individually set actuator approach directions and angles in 10° grid.
Actuator extremely durable/robust.

S400 , S410 Safety Hinge Switches



Locking device without guard interlocking in acc. with EN 1088

Metal, IP 67/IP 69K

Safety Switch in hinge, internal, encapsulated

Actuation angle 180°

Cable or M12 plug, top, bottom, at wall side



Integration in control circuits up to category 4 in accordance with EN ISO 13849, mechanical guard with integrated Safety Switch

Maximum protective device opening angle of 180°. Repeatable setting (switching angle alignment) with misaligned doors. Compact, rounded-off construction design in robust metal version. Encapsulated, internal actuator guarantees proper functioning, even under difficult environmental conditions. Extremely manipulation-safe with covered screws (unobtrusive sturdy design with rear-side mounting). S410 model with wider fork dimensions for special materials.

L10 Safety Locking Devices



Locking device with guard interlocking according to EN 1088

Glass fiber reinforced plastic or metal / both IP 67

Series (AC-AHxx), external: straight, angular, resilient, adjustable

1 × above, 4 × side (90°)

Mechanical (manual, delayed actuator release approx. 15 or 20 s), or with key, max. 1000 N

Cable entry M20 × 1.5



Integration in control circuits up to category 4 in accordance with EN ISO 13849, mechanical guard interlocking with manual locking and unlocking

Universal use with 5 actuator approach directions. Multiple heavy-duty actuator series AC-AHxx for a wide range of installation conditions. Self-centering with funnel-shaped entry opening. Reduced wiring through manual locking and releasing, optionally with knurled nut or key. Economical locking device with compact construction.

L100, L200 Safety Locking Devices



Locking device with guard interlocking according to EN 1088

Glass fiber reinforced plastic / IP 66 (L100), metal / IP 67 (L200)

Series (L100: AC-AHxx, L200: AC-AHLxx), external: straight, angular, resilient, adjustable

1 × above, 4 × side (90°)

Mechanical (spring), electro-mechanical (magnet), max. 1100 N (L100), max. 2500 N (L200)

M20 × 1.5 cable entry (3-way)



Integration in control circuits up to category 4 in accordance with EN ISO 13849, mechanical guard interlocking (spring-force), electro-magnetic guard interlocking (magnet-force), auxiliary release, emergency release (L200), illuminated displays for magnet activation (L200)

Universal use with 5 actuator approach directions. Multiple heavy-duty actuators for a wide range of installation conditions. Self-centering with funnel-shaped entry opening. Adjustable switch-on power reduction (L100). "Heavy duty" use, including under tough, harsh ambient conditions and external mechanical stresses (L200). Ergonomically optimized panic button, selectable position (L200).

Series-Specific Accessories Actuators



Roller lever (also in porcelain), lever actuator, plug-in actuator, pulling rope, additional hinge, mounting plates, built-in plug, actuator locks, etc.

Easy to mount without special tools. Universal use.

High-quality materials (metal, plastic). Rubber-mounted. Resilient. Long, short, combined. Angular, straight. Adjustable, functional, universal.

Safety Command Devices



ERS200 E-Stop Rope Switch



ESB200 E-Stop Button



Specifications

Type

E-Stop command device in accordance with EN ISO 13850, EN 60947-5-5

Housing / Protection class

Metal, IP 67

Actuator

Stainless steel bolt, steel rope with signal-red sheathing

Actuation

Position-independent per rope (pull: 83 N / 235 N, slacken: 63 N / 147 N). Pull on forced separation: 90 N / 250 N.

Mounting

Straight, angular

Connection technology

M20 × 1.5 cable entry (1- or 3-way), M12 plug

Certifications

CE  c  US

Functions

Integration in control circuits up to category 4 in accordance with EN ISO 13849, position-independent E-STOP command input, reset function (reset button with indicator), rope head with alignment indicator

Features

Machine is stopped by pulling the rope or on rope breakage.
Simple rope adjustment by means of switching point indicator.
Clicks in on both sides with friction-locking contacts.
Compact metal housing.
Use even under difficult conditions.
Precise bolt guide.

E-Stop command device in accordance with EN 60947-5-5 and EN ISO 13850

UV-resistant, impact-resistant plastic/IP 67, IP 69K

Button, 40 mm diameter, red, self-locking

Position-dependent, manual, per button (25 N)

Mounting, installation

Cable entry M20 × 1.5
M16 × 1.5
M12 plug

CE  c  US

Integration in control circuits up to category 4 in accordance with EN ISO 13849, position-dependent E-Stop command output, reset function (via rotary knob or key)

Designs for mounting or installation.
2 safety circuits, 1 signal circuit. Either screw terminals or M12 connection.
Sturdy housing with "STOP" signal ring.
Protected screw fitting.
Ergonomically optimized.

Safety Relays



MSI-SR4 Electro-Mechanical Relays



MSI-SR5 Electro-Mechanical Relays



Specifications

Type in accordance with
EN IEC 61496-1 (Annex A)

SIL in accordance with
IEC 61508 and
EN IEC 62061 (SILCL)

Performance Level (PL)
in accordance with
EN ISO 13849-1

Category in accordance
with EN ISO 13849

Stop category in
accordance with
EN IEC 60204-1

Signal output

Response time

Safety-related switching
outputs (OSSD)

Dimensions, W × H × D

Certifications

Functions

Features

Type 4

SIL 3

PL e

Up to 4 (depending on the category
of the upstream protective device)

0

Relay output (NC)

10 ms

3 relay outputs (NO)

22.5 × 99 × 113.6 mm



Sequential circuit for type 4
protective sensors. Two-channel
E-STOP circuit. Safety guard
monitoring.
Automatic start/restart, optionally
with/without start/restart interlock
(RES). Static contactor monitoring
(EDM). Cross circuit monitoring

Very short response time.
Monitored reset button.
3 release circuits, 1 NC contact as
signal circuit.
Potential-free safety-related
switching outputs.
LED displays: K1, K2, supply
voltage, RES.

Type 4

SIL 3

PL e

Up to 4 (depending on the category
of the upstream protective device)

0

Relay output (NC)

10 ms

2 relay outputs (NO)

22.5 × 99 × 113.6 mm



Sequential circuit for type 4
protective sensors. Two-channel
E-STOP circuit. Safety guard
monitoring.
Evaluation of 2 different sensors,
optionally with/without start/restart
interlock (RES).
Static contactor monitoring (EDM).
Cross circuit monitoring

Very short response time.
Monitored reset button.
Potential-free safety-related
switching outputs.
LED displays: K1, K2, supply
voltage, RES.

Safety Relays



MSI-RM2 Electro-Mechanical Relays



MSI-CM Contact Extension Module



Specifications

Type in accordance with
EN IEC 61496-1 (Annex A)

SIL in accordance with
IEC 61508 and
EN IEC 62061 (SILCL)

Performance Level (PL)
in accordance with
EN ISO 13849-1

Category in accordance
with EN ISO 13849

Stop category in
accordance with
EN IEC 60204-1

Signal output

Response time

Safety-related switching
outputs (OSSD)

Dimensions, W x H x D

Certifications

Functions

Features

Depending on the upstream AOPD

Depending on the upstream AOPD

Depending on the upstream AOPD

Up to 4 (depending on the category
of the upstream protective device)

0

Relay output (NC)

10 ms

2 relay outputs (changeover)

17.5 x 99 x 113.6 mm



Signal conversion of electronic
outputs of active optoelectronic
protective devices on potential-free
relay contacts.

Monitoring of external contactors
in the signal circuit with the
upstream protective device

2 release circuits, 1 break contact
as signal circuit for contactor
monitoring (EDM).

Cost-effective relay interface for
safety-related sensors with RES
and EDM.

LED displays: K1, K2.

–

SIL 3

PL e

4

0

1

20 ms

5 relay outputs (NO)
2 relay outputs (NC)

22.5 x 99 x 114.5 mm



Contact extension module with
extension block in accordance with
DIN EN 60204-1/VDE 0113 part 1
for contact multiplication for
E-Stop relays and two-hand control
units

1- or 2-channel wiring.

Designs with screw terminals as
well as with spring terminals.

Basic insulation.

5 release contacts, 1 signal
contact, 1 feedback contact.

MSI-DT Time Delay Module



–

SIL 3

PL e

4

0, 1 (depending on enabling current path)

–

150 ms

2 relay outputs (normal closed contact (NC), slow release)
2 relay outputs (NC)

22.5 × 99 × 114.5 mm



Safety Relay for E-Stop and protective door/light barrier monitoring with adjustable delay time (can be steplessly preset from 0.1 to 30 s)

1- or 2-channel wiring with cross connection detection.
Designs with screw terminals as well as with spring terminals.
Two undelayed and two slow-release release contacts.
Automatic or manual start circuit.

MSI-MC310 Control Device for MC3xx Sensors



Depending on the number of connected sensors

–

Up to e (depending on the number of connected sensors)

Up to 4 (depending on the number of connected sensors)

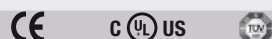
STOP 0

–

20 ms

2 relay outputs (NO),
1 relay output (NC)

22.5 × 99 × 113.6 mm



Evaluation unit for the construction of a safety system in combination with MC3x Magnetically Coded Sensors Up to 30 sensors can be connected in series, stop function, start/restart interlock, contactor monitoring (EDM) in start circuit

Compact housing.
All Magnetically Coded Sensors (1NC/1NO) from Leuze electronic are connectable.
Automatic and start/restart operation.

MSI-2H Electro-Mechanical Relays



III C, in accordance with EN 574

–

PL e

Up to 4 (depending on the category of the upstream protective device)

0

Relay output (NC)

20 ms

2 relay outputs (NO)

22.5 × 99 × 113.6 mm



Two-hand control unit acc. to EN 574, type III C.
Controlled start by checking the feedback circuit and button contacts.
Automatic start/restart, optionally with/without start/restart interlock (RES). Static contactor monitoring (EDM). Simultaneous monitoring of the two-hand buttons. Cross circuit monitoring

Two-channel control with cross circuit monitoring.
Simultaneity monitoring, 0.5 s.
2 release circuits, 1 NC contact as signal circuit.
Contact multiplication.
Potential-free safety-related switching outputs.
LED displays: K1, K2, supply voltage.

MSI-T Safety Monitoring Devices for Type 2 Sensors



Type 2

PL d

2

0 (MSI-TR1, MSI-TR2)
1 (MSI-TS)

2 transistor outputs

< 20 ms

2 relay outputs (NO)

22.5 × 99 × 113.6 mm



Safety monitoring device for periodic testing of type 2 sensors. Multiple monitoring of type 2 sensors in daisy chain connection. Start/restart interlock (RES), optionally with/without. Static contactor monitoring (EDM), with/without optional. Signal outputs "Safety on" and "Error".

Constant cyclical testing every 2 s without process interruption of the machine function during the test.
2 safety relay outputs with internal monitoring.
Up to 6 Leuze type 2 sensors can be connected in daisy chain.
LED indicators for all important functions and operating states.

Safety Relays, programmable



Specifications

SIL in accordance with IEC 61508 and EN IEC 62061 (SILCL)

Performance Level (PL) in accordance with EN ISO 13849-1

Category in accordance with EN ISO 13849

Safe inputs

Signal outputs

Reaction time

Safety-related switching outputs (OSSDs)

Dimensions

Connection technology

Interfaces

Certifications

Functions

Features

MSI 100 Base Module



3

e

4

20 (up to SIL 3)

4

Shorter than 30 ms

4

67.8 mm × 114.3 mm × 106.1 mm

Plug in screw terminals, spring-cage terminals

USB, TBUS DIN rail for bus coupler

CE c UL US FS

Freely configurable base module, monitoring of all safety-oriented functions in machines and systems, diagnostic data transfer via MSI-FB fieldbus module (option)

20 safe inputs, 4 safe switching outputs (OSSDs).
4 message, 2 clock switching, 2 ground-switching outputs.
Free configuration with MSIsafesoft software.
Extensive device library with certified function blocks.
Data stick with configuration storage.
Designs with screw terminals as well as with spring terminals.

MSI 200 Base Module



3

e

4

20 (up to SIL 3)

4

Shorter than 30 ms

4

67.8 mm × 114.3 mm × 106.1 mm

Plug in screw terminals, spring-cage terminals

USB, TBUS DIN rails for extension modules and bus couplers

CE c UL US FS

Freely configurable base module, monitoring of all safety-oriented functions in machines and systems, safety-oriented expandability with additional input/output modules, diagnostic data transfer via MSI-FB fieldbus module (option)

20 safe inputs, 4 safe switching outputs (OSSDs).
Extension modules with additional input/output modules.
4 message, 2 clock switching, 2 ground-switching outputs.
Free configuration with MSIsafesoft software.
Extensive device library with certified function blocks.
Data stick with configuration storage.
Designs with screw terminals as well as with spring terminals.

* available starting in mid-2012

MSI-EM Relay Extension Module*



3

e

4

Shorter than 30 ms

4 relay outputs

22.5 mm × 113.7 mm × 106.1 mm

Plug in screw terminals,
spring-cage terminals

TBUS DIN rails for extension
modules and bus coupler



Relay extension module for the
MSI 200 programmable
Safety Controller

Simple connection via DIN rail
connector.
Designs with screw terminals as
well as with spring terminals.
Compact housing width 22 mm.

MSI-EM I/O Extension Module



3

e

4

12, (4 of which are configurable as
input or output)

Shorter than 30 ms

4 (if using the configurable inputs/
outputs as outputs)

22.5 mm × 113.7 mm × 106.1 mm

Plug in screw terminals,
spring-cage terminals

TBUS DIN rails for extension
modules and bus coupler



Extension module for the MSI 200
programmable Safety Controller,
extension with 8 safe inputs and 4
safe, freely configurable
channels-either safe inputs or
outputs (OSSDs)

Simple connection via DIN rail
connector.
Designs with screw terminals as
well as with spring terminals.
Compact housing width 22 mm.
4 freely configurable safety outputs
(OSSDs).

MSI-FB Fieldbus Modules



3

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4

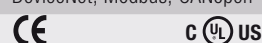
4 (not safety-oriented)

4 (not safety-oriented)

22.6 mm × 113.6 mm × 108.1 mm

Plug-in screw terminals

Interface 1: MSI interface, TBUS
Interface 2: PROFIBUS-DP, D-SUB-9
Other interface modules for
DeviceNet, Modbus, CANopen*



Fieldbus modules for connecting
the MSI 100 and MSI 200
programmable Safety Controllers
to PROFIBUS

Certified in accordance with DPV1
specification (EN 50170).
Simple connection via DIN rail
connector.
Compact housing width 22 mm.

MSI-SWC-1 Start-Up Set



3

e

4

4

4

4

4

With the software, users easily
configure the functions of
MSI modules through drag & drop
functionality.
1. Select and configure safety
function.
2. Connect inputs and outputs of
the module to the safety functions.
3. Test the safety functions and
save—finished.

MSIsafesoft configuration software.
USB cable for connecting the
Safety Controller to a PC
(not included in delivery).
Quick Start Guide for a quick
introduction to the topic
("First Steps").

Light Beam Safety Device Sets and Accessories

MLDSET Light Beam Safety Device Sets



The **MLDSET** Light Beam Safety Device Sets ensure efficient installation and quick and easy start-up of **complete solutions for guarding machine systems**. A variety of Plug & Play models offer application options ranging from access guarding to complex muting tasks.

Features

Pre-mounted and aligned Light Beam Safety Device systems in Device Columns for direct integration in machine and system controls.

Models for access guarding with and without 2- and 4-sensor muting, parallel and sequential.

Simple logistical handling through individual complete solutions in a single set.

Fast start-up of the complete system through immediately ready-to-use, turnkey design with pluggable connections.



Set-AC-M Muting Sensor Sets



The **Set-AC-M** Muting Sensor Sets for Light Beam Safety Devices and Safety Light Curtains simplify the setup and operation of muting solutions. The sets are **optimally tailored to modern machines and systems** both mechanically and electrically and through their innovative design .

Pre-mounted and aligned muting sensors with complete configuration for direct connection to the safety sensors.

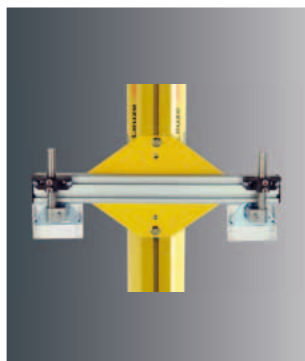
Variants for 2 and 4 sensor muting parallel and sequential.

Simple lateral mounting on Device Columns as well as on Light Beam Safety Devices and Safety Light Curtains.

Optimally matched to transceiver systems through the use of Reflection Light Beam Devices (only one-sided wiring).

Fast start-up through immediately ready-to-use, turnkey design.

MMS Muting Mounting Sets



The **MMS** Muting Mounting Sets are pre-mounted mounting brackets for Light Beam Safety Devices and reflectors in applications with 2- and 4-sensor muting. With this accessory, **mounting times can be reduced considerably**.

Mounting set for 2 and 4 muting sensors for mounting on Device Columns.

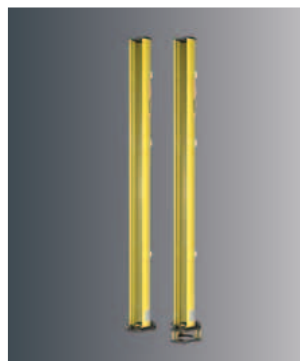
Sensor support in standard geometry for 2- and 4-sensor muting.

12-mm V2A rods for universal mounting of the sensors.

Flexible vertical and horizontal positioning.

Reflectors premounted ex works.

UDC/DC Device Columns



The **UDC/DC** Device Columns enable the stable, freestanding mounting of Light Beam Safety Devices and Safety Light Curtains on the floor. The **robust profile construction in high-quality design** will win you over with simple device mounting and the quick vertical and axial alignment in just a few steps.

Simple, stepless mounting and height adjustment of the installed devices by means of supplied mounting brackets.

Design with closed or open top by means of simple, snap-in column cover.

Protection against device contamination and damage by means of easy-to-replace protective screens.

Automatic resetting after mechanical impacts with special spring elements (UDC).

Complete mounting set for floor fixing included with delivery (UDC).

UMC Mirror Columns



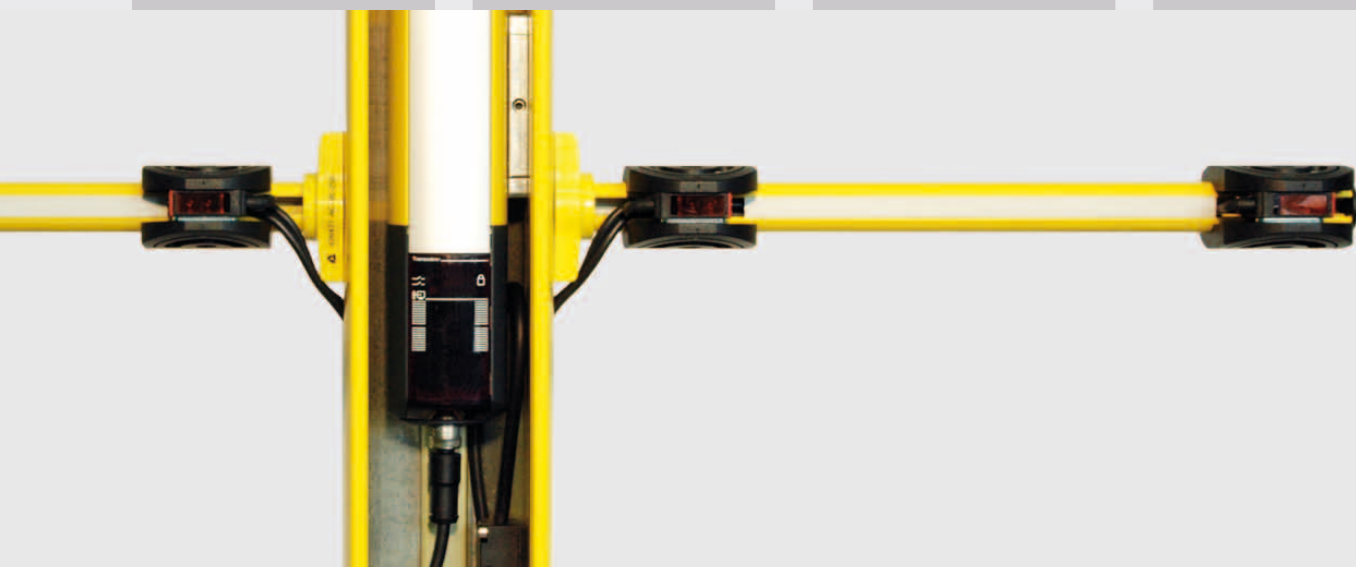
By combining **UMC** mirror columns with Light Beam Safety Devices or Safety Light Curtains, **cost-effective, multiple-side danger zone guarding** can be realized. Robust design and simple handling also increase the effectiveness of the safety device.

Individual mirror, adjustable separately in height and alignment, for beam deflection with Multiple Light Beam Safety Devices.

Axially adjustable continuous mirror surface for beam deflection with Safety Light Curtains.

Automatic resetting after mechanical impacts with special spring elements.

Complete mounting set for floor fixing included with delivery.



Machine Safety Services

Our “machine safety” service package

Whether planning and engineering or management of safety at work in the company, the use of industrial safety technology requires a high degree of responsibility awareness and well-established expertise. With the “Machine Safety Services” service package, we provide product-related services and support for everything related to machine and plant system safety. The individual services are coordinated with the safety-related application during the machine’s lifecycle and can be applied individually or combined as requirements dictate. So what can we do for you?

Safety inspections before commissioning



Regular safety inspections



Safety at work is the employer’s responsibility and therefore the “boss’s business”. In Germany the “Ordinance on Industrial Safety and Health” therefore legally requires that machinery be tested before being put into operation (initial commissioning), after long idle periods, after changes and modifications and at regular intervals. Our service staff check the correct installation, the safe interaction of machine and protective device and certify the test result in an electronic and standards-specific test report.

Regardless of the respective legal requirements, regular safety inspections guarantee compliance with safety and quality standards, serve as precautionary maintenance measures and consequently help to reduce undesirable machine downtimes to a minimum.

Upon conclusion of a service contract, we will perform periodic scheduling, regulation-compliant safety inspections and QA relevant documentation of the inspection results for you.

“Safety Know-How” online adviser



Our online adviser, “Safety Know-how” at www.safety-at-work.leuze.de provides basic information on machine safety and offers assistance on the selection and application of protective devices.



Stopping time measurements, determining safety distances



Only with a safety distance that corresponds with the stopping time of the machine can it be guaranteed that the dangerous movement will stop before the person reaches the point of operation. Our service staff perform the stopping time measurements with the most modern measurement devices, calculate the required safety distances of the safety device, and document the measurement results.

On-site service, repairs and device replacement service



In the event of a functional fault, speedy response is the order of the day. Our replacement service enables a swift device exchange, and, if necessary, our technicians will assist with the search for and removal of faults on-site. Repairs at flat-rate prices are performed in our service center competently and quickly. Please contact the responsible sales partner.

Qualified product training and seminars



We want to help you get into or stay in top shape with regard to safety technology. Our tailor-made training program assists you in selecting the course you need. In addition to the various product training courses for specialists for the respective products, we also offer seminars on machinery directives, CE conformity assessment and practical safety systems.

Safexpert Safety Engineering Software



Specifications

Selectable software packets:
3 (Basic, Compact, Professional)

Standards packets:
2 (Standard, Standard Plus)

Licensing:
first license, subsequent licenses

Installation: Internet download of the setup program, release code

Networks: Network capability

Languages: German, English, French, Spanish

Documentation: User manual

Help: Online help, search function, filter function

Start-up support, hotline



Our competent service hotline can answer a lot of questions at the early phone call stage.

At www.leuze.de we support you with free downloads of operating instructions, technical descriptions, configuration software, data sheets, configuration files and FAQs for quick troubleshooting.

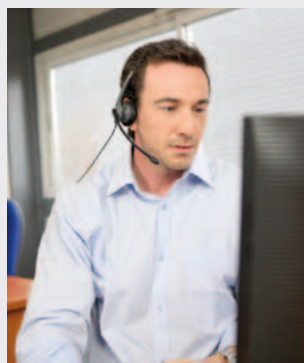
+49 8141 5350-111
service.schuetzen@leuze.de

Safety engineering, application advice



For the designer, the important thing is to integrate the safety technology into the machine in such a way that optimum productivity and ergonomics are achieved while incorporating and considering the relevant standards and regulations. Make good use of our engineers' many years of application experience when designing the optimum system solution for your application.

24h standby service



For emergencies, the 24-hour telephone standby service of Leuze electronic is available for you around the clock and seven days a week at:
+49 7021 573-0.

Features

Saves time and effort by reusing data from previous projects.

Increases legal certainty in issues of liability.

Directs the various construction divisions in the company towards uniform safety standards.

Helps to keep an overview of extensive projects.

Update service always keeps you up to date with the standards.

Maximum overview with the risk assessment with colored identifications.

Determination of the required SIL and Performance Level in accordance with
EN 62061 and EN ISO 13849-1.

Interface to IFA software program "SISTEMA".

Automatic conversion of existing projects: Calculation of the PLr and required SIL according to available data.



Optoelectronic Sensors

Cubic Series
Cylindrical Sensors, Mini Sensors, Fiber Optic Amplifiers
Measuring Sensors
Special Sensors
Light Curtains
Forked Sensors
Double Sheet Monitoring, Splice Detection
Inductive Switches
Accessories

Identification Systems

Data Transmission Systems

Distance Measurement

Bar Code Readers
RF-IDent-Systems
Modular Interfacing Units
Industrial Image Processing Systems
Optical Data Transmission Systems
Optical Distance Measurement/Positioning
Mobile Code Readers

Safety Sensors

Safety Systems

Safety Services

Safety Laser Scanners
Safety Light Curtains
Transceivers and Multiple Light Beam Safety Devices
Single Light Beam Safety Devices
AS-i-Safety Product Range
Safety Sensor Technology for PROFIBUS DP
Safety Switches, Safety Locking Devices, Safety Command Devices
Safety Relays
Sensor Accessories and Signal Devices
Safety Engineering Software
Machine Safety Services

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